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ORIGINAL ARTICLES.

AN ANALYTICAL AND CLINICAL STUDY OF THIRTY CASES OF ECTOPIC PREGNANCY.

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IN the two years ending December 1, 1904, thirty cases of ectopic gestation were admitted to the first gynecological service of the Mt. Sinai Hospital. It has seemed worth while to review these cases critically in their clinical and diagnostic lights for the purpose of determining the relative value of the varying symptoms presented in this interesting condition.

Sterility.—All authors, except the most recent, agree that a certain period of sterility is coincident with, or favorable to, the development of an ectopic pregnancy. In more recent light, however, it seems more correct to ascribe the sterility often preceding an extra-uterine pregnancy to some uterine or tubal lesion which is itself, possibly, responsible for the abnormal pregnancy, *i.e.*, a severe endometritis, a retroversion, inflammatory disease of the appendages, etc. Another reason for the alleged sterility lies unquestionably in the methods used to prevent conception, which some patients have frankly avowed, failed in the present instance. It is impossible in the present paper to go into the question of the etiology of ectopic pregnancy. Miholitch[1] has made out a good case for an accessory lumen or lumina in the tube. Ballantyne[2] suggests that if the ovum be detained in the tube till the trophoblast, by which the ovum attaches itself to the uterine wall, be fully formed, or if this be formed prematurely, the ovum may effect a lodgment upon the tubal mucosa. It may be that we shall never know positively the source or sources of tubal pregnancy; but whether Webster[3] is right in his atavistic theory, or whether congenital or inflammatory conditions are at fault, the fact remains that in some cases we find absolutely no deviation from the normal, while in others we see, accompanying the abnormal pregnancy, the grossest pathological conditions which should, in themselves, make for sterility.

In the present series of cases, the longest period of sterility was eleven years, the shortest period since the preceding pregnancy, eight months. The average sterile period for the thirty cases was 3.49 years. Seven of the patients, or 23 per cent., had never before been pregnant, so that it is impossible, in their cases, to speak of any period of sterility. Four others had had spontaneous abortions only, the periods of sterility being respectively eight months, three and a half years, two years and six years. One of these had had two attacks of gonorrhea, and another had fever in the recovery from her first abortion, presumably from some inflammatory process.

From these figures, it is evident that previous sterility in cases of tubal pregnancy is certainly not dependent upon any one factor and that it is not necessarily a premise to extra-uterine gestation. But I would like to emphasize this point in this class of cases: That the *inaptitude to conception* when it does occur, *is probably the underlying cause of the ectopic pregnancy*, and that the tubal pregnancy, on the other hand, does not depend upon the sterility. In other words, the anamnesis of the patient should not mislead the physician because a period of relative sterility has been noted.

Para.—Of the thirty patients, seven had never been previously pregnant, and four others had aborted but had never gone to term. Twelve had had one child, six had given birth to two children, and one had had four, one five, and one eleven full-term births. One of the patients had been previously operated for tubal pregnancy on the other side and had never otherwise been pregnant. Two patients had had abortions before a final gravidity which went to term.

Age.—The oldest patient of the series was forty-one, the youngest twenty-one years of age, the average age of thirty being twenty-seven and nine-tenths years. I have appended as the briefest form of expression, the following table:

Age....	21	22	23	24	25	27	28	30	31	32	33	34	35	37	41
Cases..	1	2	5	2	1	4	1	4	1	1	1	4	1	1	1

Tube Involved.—Among the thirty cases there was one hematocele. The character of the operation for which (posterior vaginal section), did not permit a determination of which tube had been involved. Another case was an intramural pregnancy with the typical history of an ectopic pregnancy. Of the remaining twenty-eight, fourteen pregnancies were found on the right side and the same number on the left, a distribution so even that it is impossible to speak of a predilection for the condition to attack either side.

Dysmenorrhea.—In but twenty-three of the cases is any note made of the character of the usual menstruation. Of these, fourteen are said to have no pain with the menstrual flow and nine are given as having had painful menses. These figures have no especial significance except, possibly, to indicate that the fourteen patients, at least, were not suffering from any gross pathological changes in the pelvic organs.

[1] Zeitsch. für Geb. und Gynäkol., Vol. 49, p. 42.
[2] Antenatal Pathology and Hygiene, "The Embryo," p. 618.
[3] "Ectopic Pregnancy," 1895.

The Bleeding.—The subject of metrorrhagia has been carefully studied. In three of the cases the data are missing. In twenty-seven cases, the average length of time preceding admission at which the patient last menstruated was 7.24 weeks. The shortest time at which the regular period had taken place was two weeks prior to admission. This was a case of tubal abortion in which there had been no external bleeding whatever. Two patients had menstruated last as long as three months before applying for admission; in one of them a hematocele was found, in the other a hematosalpinx of the left side. Between these extremes, every variety of irregularity in menstruation is noted.

In every case but one there is a history of irregularity in the menstrual flow, and this point is of great importance in considering the history of patients suspected of being the bearers of a tubal pregnancy. The usual statement, crudely put, involves a skipping of the period at the regular time with some bleeding before the time for the arrival of the next regular period. The variations show the most widely different phases. Thus, in one case (No. 184[1], a tubal rupture), the last menses before admission had taken place seven weeks previously, and there had been no bleeding or spotting of any kind up to the hour of operation. The other extreme is seen in No. 186, a tubal abortion, in which there had been constant bleeding for eleven weeks prior to admission after an amenorrhea of two weeks. Between these two forms, every variety of hemorrhage can be found.

It must be noted, however, that profuse bleeding in ectopic pregnancy is a rarity, and that its presence may usually be regarded as a sign that the condition is rather one of interrupted uterine pregnancy. In our series but four patients reported their bleeding as profuse, and in none of these did it last more than two weeks out of five or six weeks of unusual hemorrhage. A further study of the cases reveals the fact that profuse bleeding is recorded only in cases of rupture of the tube or of hematocele, and it also appears that the bleeding became more profuse at the presumptive time of rupture or abortion.

Scant bleeding or spotting is the rule in the majority of cases of ectopic pregnancy, and a moderate metrorrhagia is also not infrequently noted. In our thirty cases, eight patients reported slight spotting, four profuse bleeding, eleven moderate hemorrhage and two no bleeding whatever. One patient (No. 183, ruptured tube one day before admission), had bled profusely only the day before her operation.

The question of intermittent or of constant bleeding has been carefully investigated. Of the thirty cases, there are notes of 26 on this point. Sixteen of the patients bled constantly for a certain length of time and the flow subsequently became intermittent. In ten cases, the bleeding was of an intermittent nature only. In the former series of sixteen, we find many varieties in the character of the flow, some bleeding a little every day, some bleeding constantly for a time, the flow later becoming intermittent, and others bleeding for a time with subsequent entire cessation of the flow. There is evidently, then, no type of vaginal bleeding in cases of ectopic pregnancy, the main element which marks it being its great irregularity.

The appended table shows clearly the type of bleeding in the twenty-six cases:

Case No.	Probable Duration of Pregnancy.	Period of Amenorrhea.	Type of Bleeding.
284	One month.	None.	Constant.
285	Two months.	One month.	Constant for one month.
276	One month.	One month.	Constant.
275	Five weeks.	One week.	Constant for one and one-half weeks.
274	Five weeks.		Intermittent.
273	Eleven weeks.	Two weeks.	Constant for six weeks.
272	Two months.	Six weeks.	Constant for two weeks.
278	Six weeks.	Two weeks.	Constant.
279	Three weeks.	Six days.	Constant for six days.
280	Two and one-half months.	Nine weeks.	Constant for two days before admission.
281	Five weeks.	Seventeen days.	Intermittent.
282	Seven weeks.	Two weeks.	Constant for two weeks; amenorrhea for nineteen days, constant since.
178	Nine and one-half weeks.	Two weeks.	Constant for five weeks.
179	Eight weeks.	Six weeks.	Intermittent.
181	Two months.	Five weeks.	Constant for three weeks.
182	Two months.	One week.	Intermittent.
184	One month.	Two weeks.	Constant for two weeks.
185	Three months.	Two weeks.	Intermittent.
186	Three months.	Seven weeks.	Intermittent.
271	Two and one-half months.	Three weeks.	Intermittent.
269	Eight weeks.	Five weeks.	Constant for three weeks.
270	Six weeks.	Four weeks.	Intermittent.
187	One month.	Eleven days.	Constant five days, then intermittent.
189	Seven weeks.	Four weeks.	Constant for three weeks.
192	Seven weeks.	Four weeks.	Constant.
277	Seven weeks.	Four weeks.	Constant for two weeks.

In the preceding table the period of amenorrhea is given. This naturally varies with the length of the pregnancy but there are evidently other factors which come into play. The varyingly intense congestion of the uterine mucosa in different cases[1], accounts for the hemorrhage from this organ and for its appearance at different times in different cases. It is probable, too, that the casting off of the uterine decidua has some bearing on the metrorrhagia. In the present series of cases, the longest period of amenorrhea was nine weeks, the average for the thirty cases being 3.4 weeks. In one instance there was no amenorrhea at all, the flow starting at once upon the cessation of the menses.

Pain.—Next to irregular bleeding, the most characteristic symptom of ectopic pregnancy is pain of one character or another. The character of the pain varies considerably. Three of the patients described their pains as like those

1 The numbers refer to the gynecological cases for the year.

1 Cazeaux, Revue prat. d'obstetrique et de pediatrie, November, 1903.

of labor differentiating them sharply from the cramp-like pain sometimes seen in tubal pregnancy. It is likely that these labor pains are only the accompaniment of the expulsion of shreds of uterine decidua or of blood from the uterus, for all these patients added that their pains were followed or accompanied by the appearance of blood. In two of these cases there was found a ruptured tube, in one a tubal abortion.

Eight patients described their pains as sudden and sharp, localized, as it appeared, over the affected tube, and varying from two weeks to two days before admission in its appearance. Of these four presented ruptured tubes, two, tubal abortions, and one each a hematosalpinx and an unruptured tube.

Eleven patients complained of cramp-like pains in the abdomen. In some of the cases this was not sharply localized but extended over the entire abdomen or its lower part. In the greater number of instances, however, the cramps were referred to the region of the affected tube. Their intensity also varied, some patients complaining of intense pain, others averring that it was only uncomfortable. Of these eleven cases, five were found at operation to be hematosalpingitides, three were tubal ruptures, three were tubal abortions and one was an unruptured tube. The cramp-like pain is now generally and quite properly accredited to the effort of the tube to rid itself of its contained ovum, or if this has already escaped, of the clot remaining in its lumen.

Bearing-down pains were noted by four patients, two of them in cases of ruptured tubes, two in cases of tubal abortion. Of these one was an intraligamentous rupture with the development of a large mass, one was a hematocele, and the other two showed moderate amounts of blood in the general peritoneal cavity. One patient complained of pain only when sitting, which was relieved by lying down, and two patients had greater pain on walking than at other times, one of these (a patient with a ruptured tube), having noted a sense of fulness in the pelvis on standing and walking. But a single patient said she had no pain whatever, her tube being the seat of a hematoma.

There are, as will be seen, no typical or classical pains by which we can distinguish the various forms of ectopic gestation. In cases of hematoma and tubal abortion cramp-like pains appear to be more common, but they are seen also in other forms of extra-uterine pregnancy. It is unfortunate that we can find no differential points to distinguish the various types by clinical signs; the examining finger must after all remain the principal guide to accurate diagnosis.

Twelve patients stated the character of their pains as constant or intermittent, four saying they were continuous, and six intermittent, two having pain which varied in its intermittency, at times being constant. There seems to be no relation, however, between the lesion and the constancy or intermittent character of the pain.

There were frequent complaints of vomiting after the onset of pain, twelve patients emphasizing this fact. Of these six were the subjects of ruptured tubes, one of an unruptured tube, two each of a hematosalpinx and a tubal abortion, and one of an intramural pregnancy. Unquestionably this vomiting was of so-called reflex character, provoked often by the presence of blood in the general peritoneal cavity, all the patients but one having this condition present. It is likely, too, that the pelvic peritonitis which often accompanies ectopic pregnancy may account for the vomiting.

The following table shows clearly the relation of type of pain to the lesion found at operation:

	Labor Pains.	Sharp and Sudden Pain.	Cramplike Pain.	Bearing-Down Pain
Tubal Rupture.....	2	4	3	2
Tubal Abortion.....	1	2	2	2
Hematosalpinx		1	5	
Unruptured Tube....		1	1	

Symptoms of Pregnancy.—Six of our patients considered themselves pregnant at the time of their admission. They had reached this conclusion on account of their symptoms—the amenorrhea, nausea and vomiting, frequent urination and painful breasts.

It does not always follow that an ectopic pregnancy is necessarily accompanied by the usual recognized symptoms of intra-uterine pregnancy. Indeed these symptoms are often strikingly absent. I have carefully gone over the histories of these thirty patients, however, and find that whereas in seven no record at all is given, the remaining twenty-three showed some interesting facts. Thus, eleven of them suffered from nausea and vomiting, while five had no such phenomena. Three had noticed enlargements of the breasts but seven had not observed this, nor had any of the patients noted the darting signs so common in early pregnancy. Four complained of frequent urination whereas nine did not suffer from this annoyance.

A résumé of these figures shows quite plainly that while the phenomena of early pregnancy are not by any means incompatible with the presence of an ectopic pregnancy, they are absent more frequently than they are found; a history of pregnancy, on the other hand, does not militate against the diagnosis of a pregnancy located in the tube.

Pulse and Temperature.—In the cases of freshly ruptured tubal pregnancies, the pulse was naturally much accelerated. In three of the cases it was imperceptible at the wrist at the time of operation, but these patients all recovered, a demonstration of the oft-repeated observation that women stand the loss of blood well. In other cases, usually those of rupture, the pulse was often 120 or higher at the time of admission. Unless there has been considerable bleeding, however, there seems to be no especial tendency toward rapidity of the pulse in tubal pregnancy.

The temperature, on the other hand, is usually somewhat elevated. Eighteen of our thirty cases had temperatures above the normal before operation. Eight of the thirty patients were operated upon immediately after admission and their temperatures were therefore not taken. Fifteen of the eighteen who had elevated temperatures had blood in the general peritoneal cavity either from rupture of the tube or from tubal abortion. Their temperatures were as follows:

99-100°	100-101°	101-102°	104° Fahrenheit.
9	8	1	1 (Infected Hematocele).

It is plain, therefore, that omitting consideration of inflammatory conditions, the preoperative temperature in cases of tubal pregnancy is due to the presence of blood in the free peritoneal cavity. Although it is needless to consider the elements which cause a rise of temperature in the presence of a foreign body of any kind in the peritoneum, we know that blood and even salt solution will bring this about. It must not be forgotten, however, that, as mentioned above, a pelvic peritonitis of more or less severity is a usual complication of tubal pregnancy and this may serve too as a causative factor of the temperature.

The practical bearing of moderately elevated temperature in the differential diagnosis of tubal pregnancy, when infection of any kind can be excluded, is evident. A normal or ordinary uterine abortion with which this condition is most frequently confused, gives rise to no deviation of temperature. Given a history, then, suggestive of tubal pregnancy, with a moderate rise of temperature, the suspicion will be strengthened if the other essentials for the diagnosis are present.

Tenderness.—One point which has been brought out with great clearness in this study is that the mass which is felt next to the uterus in cases of tubal pregnancy is almost invariably tender. The text-books but barely mention this fact; indeed few of them speak of it at all.

We have found that tenderness on palpation is a very constant finding in all our cases of ectopic gestation. Among the thirty cases, a note is made in twenty-three of the result of the pelvic examination in this particular. In twenty-two of these, the record distinctly states that tenderness or sensitiveness was present over the mass adjacent to the uterus, in the great majority of cases exquisite tenderness being complained of. This was entirely independent of the character of the lesion present; it was found equally in cases of tubal abortion, of ruptured and unruptured tubes, and of hematoceles. The cause of this sensitiveness lies undoubtedly either in the compression of the distended tube or in the peritoneal adhesions so often present. Whatever its origin, it offers a practical diagnostic point taken in connection with a history suggestive of ectopic gestation.

Abdominal Rigidity.—Ectopic pregnancy seems to offer an exception to many intra-abdominal lesions in that the abdominal wall is not often rigid. Rigidity is noted in six of our cases, whereas, in five the abdominal wall was especially lax. In other words, the abdominal wall may or may not be rigid, but the absence or presence of rigidity has no diagnostic significance.

Previous Pelvic Disease.—In view of the widespread belief or, at least, frequent assertion, that inflammatory pelvic disease is a prominent factor in the causation of extrauterine pregnancy, I have carefully investigated the histories and operative findings in the thirty cases to ascertain the extent to which this held true. Two of the patients gave a history of fever following a former puerperium; in one of these a hyposalpinx was found opposite the affected tube, in the other the pelvic organs were normal. One patient only had had previous gonorrhea and another had been operated for pyosalpinx on the opposite side a year previously.

But one patient in the whole series presented a typical history of pelvic inflammation. She had had repeated abortions and after her third labor had suffered from a purulent endometritis. At the operation for her tubal pregnancy, there was found an intense pelvic peritonitis on the left side with an unruptured tubal pregnancy in the tube which ran over a large ovarian cyst. On the right side there was a smaller, adherent ovarian cyst. No other patients presented pelvic inflammations of any kind.

We have, then, but five patients, or 16 per cent., who gave any evidence of previous pelvic inflammatory processes.

Whatever may ultimately prove to be the etiological factor or factors of ectopic pregnancy, it is certainly evident that a previous gonorrhea or pelvic inflammation alone is not responsible for it. It seems rational to believe that not one but many elements enter into the causation of the condition. In one case it may be endometrial or pelvic inflammation, or a congenital or acquired tubal anomaly, while in another it may be atavistic or improper or premature nidation of the ovum; or the fault may even lie with the spermatozoa. We do not know and it is unwise and unscientific to allege that any one of the elements named, or other factors, are responsible for the many cases of ectopic pregnancy constantly coming under observation.

Conclusions.—1. Sterility does not necessarily precede the development of ectopic pregnancy. If it does exist, its cause is often the same as the cause of the abnormal pregnancy.

2. The main characteristic of the bleeding in ectopic gestation is its great irregularity, there being no type. As a general rule it is not profuse. It may be constant or intermittent, and its character or profuseness has no relation to the type of the lesion. A chilly feeling often accompanies the bleeding, and vomiting and nausea may accompany the first flow. The uterine flow has apparently no connection with the death of the fetus.

3. The pain in tubal pregnancy is usually localized over the site of the lesion. It has no definite character; it may be cramp-like over the affected tube, it may simulate labor pains, it may be sharp and sudden, or it may be of a bearing-down nature. The pain during a tubal abortion and that concomitant with the presence of a hematosalpinx is usually cramp-like.

4. The usual symptoms of pregnancy may be present. They are frequently absent but their absence does not militate against the possibility or probability of an ectopic pregnancy.

5. Tenderness on palpation of the mass adjacent to the uterus is of great diagnostic value when taken in connection with the history and the other pelvic findings.

6. A rise of temperature between 99° and 100° F., in the absence of signs of infection is worthy of consideration in the diagnosis.

7. The causative factors of tubal pregnancy are probably numerous. Not one element but many may bring about the connection in different instances. It is likely that atavistic tendencies, congenital or acquired anomalies, pelvic inflammations, ovarian and tubal disease, all play a rôle in individual cases; but none of these factors alone is sufficient to explain all cases.

8. We have as yet no definite data by which we can differentiate diagnostically between all the varieties of ectopic gestation. Occasionally this may be done, but it is impossible always to distinguish between an unruptured tube and a tubal mole. A hematocele and a freshly ruptured tube can almost always be differentiated from the other usual lesions.

The value of Werth's dictum to regard every unruptured tube in the light of a malignant neoplasm, has not diminished with the years.

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THE TREATMENT OF CHRONIC NASAL CATARRHS WITH SULPHUR.[1]

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THE chronic nasal catarrhs are encountered in the daily work of the general practitioner and by their persistence for years or through life are a constant factor in the consideration of individual health and comfort. Their frequency will not allow them to be disregarded or relegated to the hands of those especially skilled and experienced in their treatment, for were experts to devote all of their time and energy to the cure, the material would simply overwhelm the operators.

The chronic nasal catarrhs are often a sequel to other diseases, while they in their turn may beget still other and dangerous maladies. It therefore follows from the frequency of their occurrence as well as from the interconnection of other local and systematic diseases that the man in general practice is from necessity compelled not only to recognize these catarrhs, but also that they are a factor in producing other disturbances of health present and to come. In undertaking to cure some disease in the field of his own work his task may be incomplete or futile unless at the same time he is able to cure or ameliorate the persistent disturbance in the outer portion of the respiratory tract.

The specialistic treatment of the chronic nasal catarrhs requires knowledge, skill and the acquired technic of practice, not only in the application and variation of remedies but also in sundry surgical procedures for making occluded air passages pervious. These different manipulations must properly remain the domain of him who has fitted himself by constant application in the treatment of suitable and selected cases, yet when these are provided for, the multitude of milder, latent, indolent and apathetic subjects, is left without relief.

The nasal cavities are the great depot for the reception of any germ or spore of any nature which can be carried by the atmosphere. In health they may there be found in any individual who has exposed himself to their reception; although a deleterious action by their presence may never be apparent. If this be true of the state of health with normal membranes, glands and secretion, it demonstrates insusceptibility or immunity should the germ be virulent. In chronic nasal disease, however, where membranes are altered, or partly destroyed, with submucous tissues congested or inflamed and glandular structures no longer functionating, with altered, infected and decomposing secretion and incrustation, together with surfaces without drainage, with heat and moisture always existing, the vitality and multiplication of pathogenic bacteria cannot but be increased with whatever power of infection they may possess.

The chronic nasal catarrhs prey upon the thin and weak, the unresisting constitutions; and by their development they produce impoverished blood, debility and more extensive disease of the respiratory organs, as well as of the adjacent ones of special sense, leading also perhaps as many insist to dyspepsias and their complications.

The atrophic or end stage of nasal catarrhs is incurable, but a systematic treatment that conserves functions not completely destroyed, that mitigates and cures constant symptoms, that lessens the concomitant debility and restores the threatened general health, seems very desirable. As a remedy fulfilling these requirements, for common use, the writer recommends sulphur.

Sulphur, without which dermatology would be barren in its therapeutics, has since antiquity been a familiar substance in medicine. It is styptic, desiccant, astringent, germicide, parasiticide and insecticide. It has never received a complete or perfect study and its most important medicinal properties, never having been fully considered, have been simply overlooked. It is

[1] Read at the Annual Meeting of the American Therapeutic Society, Philadelphia, May 4, 1905.

sufficient, however, here to view this element as a non-poisonous tegumentary antiseptic and preservative. That it has peculiar powers of healing when locally used, and that, too, in specific inflammatory processes, can be readily demonstrated, for examples, in the diphtheritic angina of scarlet fever, in suppurative and necrotic processes, as phlegmon and carbuncle or in peculiar infections like erysipelas.

Of late years a plausible theory has been uttered that the curative activity of sulphur is much enhanced by having it prepared in the form of a soluble compound or body and by inference that its simple uncombined state is more or less inert. This is a fallacy, because sulphur not in solution is quite active in all forms of its intrinsic powers, and although the "soluble forms" are likewise medicinally energetic, yet they are more strongly irritating and objectionable in color and odor.

The best galenical preparation is the official sulphur præcipitatum U. S. P., a light, impalpable powder, which by sufflation may be widely diffused through space.

In treating the several forms of chronic nasal catarrh, it is the custom of the writer to have the patient seated with head erect and the mouth open. The anterior nasal cavity is exposed with a speculum, the tip of the nose elevated and the sulphur freely and thoroughly blown in with a strong powder blower. This has been properly done when the powder appears from mouth and opposite nostril and an irritative cough results. The treatment is repeated upon the other side. The posterior nasal space and nasopharnyx may also be treated directly by way of the floor of the nose or fauces. These procedures are not entrusted to the patient unless unusually attentive to his own case. They are made two or three times a week for a month and once a week for the next two months. The local sensations of sulphur are not unpleasant. Occasionally in women it sets up a conjunctival hyperemia when used too profusely or accidentally blown upon the face, and in some females nasal irritation and pain are complained of. Then it is best to use the treatment but once a week. Except these minor objections the writer has seen none but beneficial results. With this method a considerable number of cases have been cured and the results seem uniform. Success of course requires a suitable selection, those in which there is no other primary nasal disease, deflection, deformity or growth requiring surgical methods.

The subjects of chronic nasal catarrh have an anemic look. Blood examinations amply confirm this. It is most noticeable in the young, and one of the earliest recognizable effects of free sulphur insufflations is a pronounced improvement in the color of the skin. It is with certainty that one can predict this change after one or two treatments.

To specify the several nasal diseases and wherein and how the value of sulphur can be elicited it may be noted that in *simple chronic rhinitis,* hypertrophic stage, the nasal discharge is diminished, the mucopurulent and purulent exudate becomes clear and much less, the intermittent nasal occlusion ceases, the dull frontal headache is gone, the manner brightens, the itching of the nose, sneezing and cough abate. The diffusedly swollen deep red membrane diminishes in size and lightens in color. *Intumescent rhinitis* is relieved. In *hypertrophic rhinitis* the effects are fair. In *atrophic rhinitis* the treatment cannot give such results as in the earlier stage. In *phlegmonous rhinitis* (furunculosis) the disease is often aborted and much relief given the pain and feeling of weight in the nose. In *simple chronic nasopharyngitis* (American catarrh) without organic obstructions the fulness and postnasal dryness, the postnasal dropping and incrustration, the hawking, expectorating and vomiting cease. Scabs and fetor, purulent and bloody discharges vanish; frontal and occipital headache, hebetude of mind and disinclination for work are gone. *Hyperplastic nasopharyngitis* is improved. *Scrofulous rhinitis* can be much helped, arrested or cured and secondary tuberculous infection of the cervical lymphatic glands prevented; likewise the ocular apparatus, the corneal surface and the eyelids preserved from extension of infection. This one of the initial periods of tuberculosis must be combated like all others with hygienic and constitutional adjuvants.

The immediate effects of the sulphur are to check the purulent irritating nasal discharge, heal the excoriations, improve the patient's pale and languid looks and stop the sniffling, sneezing, crust formation and odor. In *epistaxis* from any cause this treatment is one of the best applicable. It should, however, be reinforced with a gauze nasal tampon for twenty-four hours. The nose bleeding common in spring in young people and in children and recurring every day or two succumbs promptly to sulphur alone. Sulphur does not cure acute nasal catarrh-coryza, or "catching cold," to which all victims of the chronic forms are characteristically prone. This, as is well understood, requires in all cases such general treatment as hardens and invigorates the system and increases the weight of the body. As has been said, however, in chronic disease not requiring surgical aid and with the mucous membrane not destroyed by atrophic degeneration, sulphur gives much and lasting relief from all the persistent symptoms that torment existence, and it is maintained that it is as valuable as it is simple. As sulphur possesses such marked powers to cure nasal catarrhs it naturally follows that it may be a useful postoperative dressing, particularly in the surgery of the nasal cavities. That this is so the writer has convinced himself repeatedly. It possesses as such all the good qualities and properties of a perfect dusting powder, not the least of all being its hemostatic action.

TREATMENT OF THE INDIVIDUAL CASE IN APPENDICITIS.[1]

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LAST November Dr. Parker Syms wrote an article upon appendicitis (*Annals of Surgery*) based on an analysis of 219 cases, 75 of which were personally operated upon, whereas 144 were operated upon by his assistants. In his own series of 75 cases the mortality was 6.6 per cent., whereas in the 144 cases treated by his assistants the mortality is 14.5 per cent. In his discussion of this paper before the New York Surgical Society Dr. Lilienthal reported 455 cases operated upon at Mt. Sinai Hospital during the four preceding years with a mortality of 10 per cent. The doctor heartily endorsed the position taken by Dr. Syms, adding that "when the symptoms were evidently receding upon admission to the hospital, an operation was *occasionally* delayed from hour to hour; but the operation was *never postponed* in the hope that the symptoms might recede."

Dr. George D. Stewart said that in his work at Bellevue and St. Vincent hospitals he had followed the plan suggested by Dr. Syms.

Dr. Rogers made the remarkable statement that most of the surgeons of New York were, he thought, in close accord with these views which, to quote from Syms, are as follows: "There is only one thing to do when the diagnosis is made and that is, operate." The rule might be modified, though rarely, and the reason ascribed for this extraordinary position is that, "in acute inflammatory condition in the abdomen the only way to ascertain its extent and seriousness is by operation." These quotations are made because they are recent and because they come from a surgical society to which we must often look for mature reliable advice.

It has been a good many years since the surgeons of the western country, who do a good share of work, have followed a plan of treatment which has a mortality so high. A Chicago surgeon (Ochsner) reports a mortality of 2.2 per cent. in a series of 1,000 cases including a period of practically three years. Another western hospital, St. Mary's (Mayos), reports 512 cases during the preceding year with four deaths, a mortality of eight-tenths of one per cent. During the past twelve months we have operated upon 231 cases with two deaths, a mortality of less than one per cent. No case was lost without operation and no bad case was turned over to an assistant. In six of the cases, in which the patients lived outside of Omaha, a second trip had been made, the condition not warranting an operation at the time of our first visit. All recovered.

Further reports may be quoted, but we have sufficient data to show that there is a great difference in the mortality between the eastern and very radical but fortunately smaller wing of the surgical profession and the conservative, analytical methods which have had origin and greatest encouragement among the western surgeons. There is a difference also in their methods of treatment based, it must be, upon a different conception of the pathology having origin in the appendix. That this pathology is most variable should, we think, be generally understood.

At least, three major conditions practically determine the course and severity of a given attack: (*a*) The infectivity of the mycotic agent which predominates in the inflammatory outbreak; (*b*) the amount of leakage, that is to say, the extent of the contamination at an early age; (*c*) the anatomical location of the appendix. To be more specific, all agree that a streptococcic peritoneal infection is very dangerous, but assuming that the perforation has been early (before adhesions have substantially formed) and the amount of exudate has been great, we then face what the English have called a "peritoneal catastrophe." Add to this a perforation near the tip of the appendix which reaches near the under surface of the liver, or if transversely located, perforation occurring practically in the middle of the abdomen, and we then face a dangerous infection at a point where protective adhesions are meager and more tardily developed. In other words, deeply located central infections do not have the early aid of the omentum (a condition which makes this disease more hazardous during the extremes of age) nor the supplementary support of the parietal wall along the borders of the abdomen.

These major considerations, we believe, are generally accepted by experienced observers. The real cleavage in views seems to originate upon points which are important, but minor in character, that is to say, there is some honest difference of opinion (1) as to the amount of infection the peritoneum, intelligently aided, may safely bear; (2) as to the method, which supports the peritoneum in this emergency, (*a*) by limiting the infection process, (*b*) by surrounding it with a barrier which offers at least a reasonable period of truce.

In the argument of these questions certain academic principles, we think, must be admitted; *e.g.*, that *rest* applied to an inflamed edematous segment of bowel promises the same substantial aid toward limiting the inflammation and encouraging resolution that it gives to other organs under like conditions. The promptness with which adhesions occur is favored by rest, and all admit that their development is an element of safety.

Arresting the peristaltic wave from above, that is to say, stopping its recurrent momentum from being expended upon a comparatively fixed, inflamed, edematous, septic segment, ameliorates the inflammatory progress so essentially as to

[1] Read before the Nebraska State Medical Society.

change the whole course and severity of a given attack; in other words, withdrawing food and avoiding cathartics, emptying the lower bowel by the repeated use of normal salt or standard enemata, encourages a peristalsis with a mild, gentle *origin* at the inflammatory zone rather than a painful, inefficient and damaging wave which *terminates* there. Want of agreement or a lack of appreciation of these major and minor but basic principles determining the course and outcome of a septic inflammation involving the peritoneum, having the appendix as its origin, leads to an even greater and certainly more serious diversity of views concerning the treatment.

No intemperate reference should be made to our eastern colleagues; they have been the pioneers, they have taught us valuable lessons concerning the pathology of this disease and pointed out its dangers. We wish only to be permitted to acknowledge a still greater achievement on their part, viz., that of openly retreating from a position which brings them an admitted mortality of practically 10 per cent. and to accept a course of management which has a mortality of from one to two per cent. It is not the interval cases, nor an inflammation confined to the appendix, nor the management of a localized abscess, that admits of debate, but it is especially the management of the sharp, progressive attack, *most often seen during the second day* with symptoms becoming more obtrusive on the third and even on the fourth days, that has led to views so divergent and regrettably to discussions so acrimonious.

The proportion of cases in which the symptoms quickly become overwhelming is quite small, whereas the number of cases, however sharp they may seem at first, which respond to the plan of applying rest to the inflamed zone and yet encouraging the escape of flatus, is surprisingly large. The fact that a case seems to be growing worse at the end of the second day is not an argument in favor of prompt operation, nor on the third day, and this statement applies to the fourth and sometimes to succeeding days. There is no definite time at which the above treatment (withdraw all the food, the frequent use of normal salt in the rectum *slowly* given, supplemented by ice-bags, the standard, or the molasses and milk enemata) will succeed in bringing away flatus. It may require twenty-four or forty-eight to seventy-two hours. But this one observation may be accepted as fixed, viz., if gas does not escape in a severe attack *before* operation, peristalsis will practically never be established *after* operation.

With the escape of gas the left side of the abdomen becomes softer, the actual limitations of the inflammatory process becomes more palpable, the opportunities to reach a suppuration safely, either by the intra- or the extraperitoneal methods are greatly advanced. If the extraperitoneal method can be employed, drain the abscess and stop. If the intraperitoneal method must be used, the operation really consists in the intelligent use of gauze tampons and the control of the pus as it escapes from the slowly opened abscess. Brisk, careful sponging allows practically no contamination of even the small, exposed area of peritoneum.

There is a class of cases, which we believe to be small, in which the above management does not lead to a horizontal recession of symptoms. The abdomen especially remains rigid throughout. The other symptoms reach and remain at the danger line. There is in these cases, so far as the clinical evidences can be interpreted, a general peritonitis. Some gas may escape, but the left side of the abdomen remains hard. These cases require drainage of the peritoneal cavity for the purpose of relieving tension (pressure) and absorption, but they do not need sponging and irrigating or extended search for all the pus.

In our series of 231 cases, above mentioned, 71 were suppurative; of these four assumed the type known as acute, general, septic, peritonitis, with one death; the 216th in the list; the remaining death, the ninety-first, was an interval, but very adherent, case, which died from hematemesis, there being a history of gastric ulcer three years before.

DISEASES OF THE PANCREAS.[1]

BY O. M. LONGENECKER, M.D.,
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THE pancreas, the most secluded organ in the abdomen, has at last yielded up a part of the secrets of its hidden and one-time hopeless inflammations. A study of the new light shed upon its history is intensely interesting and important.

This organ is absolutely necessary to life and until lately has not been studied relatively to its importance. Its parts on the right extremity, are the head and the neck; the latter is due to the superior mesenteric artery and vein. On the left are the body and the tail. The pancreas is six inches long, two inches broad and a half an inch thick, weighing two to three ounces. The general structure is almost identical with the salivary glands. The development is from the duodenum opposite the liver; both ducts slide around until they are contiguous, drawing back a portion of the intestine to form the diverticulum of Vater; this pouch which is the common outlet of the ducts has a great power for evil, holding gall-stones and thereby forcing gall through the pancreatic duct, causing the havoc to be described later.

Paul Langerhans, in 1869, discovered groups of cells in the center of the lobules which stain differently from the remainder, called the islands of Langerhans. They produce an internal secretion similar to adrenalin, which enters the blood by way of the thoracic duct, its office ap-

[1] Read at Kansas State Medical Association, Wichita, May 4, 1905.

parently is, after uniting with a muscle ferment, to reduce the sugar in the blood. The digestive ferments of the pancreatic juice are trypsin, acting on albumin. steapsin, acting on fats, amylopsin, reducing starches, milk curdling and sugar-splitting ferments. On the basis of physiology, histology, pathology and embryology, the pancreas represents an organ within an organ.

Diseases of the pancreas are frequently combined with diseases of neighboring organs; the disease having extended from these organs to the pancreas, or vice versa. For these reasons as well as others, the diagnosis is extremely difficult. Diseases of the pancreas may be divided clinically into acute, subacute and chronic. Acute pancreatitis has a very high mortality and runs a course of fearful rapidity. Its etiological factor is doubtless a gall-stone in the diverticulum of Vater, preventing escape into the intestine, and the contractions of the gall-bladder forcing gall into the pancreas. The fat-splitting ferment acting with threefold power in the presence of gall, together with the other ferments of the pancreatic juice, destroys portions of the organ with resulting hemorrhage and escape of pancreatic elements into neighboring tissues. Death is due to hemorrhage, absorption of toxins, and pressure on the solar plexus. The diagnosis is very difficult and may be confused with gall-stones, peritonitis, intussusception, intestinal obstruction, ulcers of the stomach and duodenum, and possibly appendicitis and extra-uterine pregnancy. The disease is characterized by sudden onset in a patient previously healthy; excruciating pain in the upper abdomen, occurring in paroxysms, aggravated by motion, point of greatest tenderness, one inch above the umbilicus, persistent vomiting and collapse. Later, constipation, distention of upper abdomen, slight jaundice, fat necrosis in abdominal cavity, glycosuria, rare in early course, as the islands of Langerhans are usually the last structures affected.

Intestinal obstruction is differentiated by greater distention of abdomen, peristaltic waves, can be felt, seen and heard, obstipation is absolute, vomiting becomes stercoraceous, lesion is lower in abdomen, collapse is delayed. Biliary colic is distinguished by pain on the right side radiating to the right shoulder; in pancreatitis pain is in the median line, radiating to the left.

Perforations of the stomach and duodenum usually have a characteristic history, liver dulness disappears from escape of gas, vomiting subsides, peritonitis develops rapidly.

Appendicits is eliminated by testing for tenderness at McBurney's point.

The secretions from an injured pancreas, when mixed with blood, are very toxic, and may so affect the peritoneum when in the cavity that death will result. It will be remembered that pancreatic disease with its attending pressure on the solar plexus, formed a part of the symptom-complex of President McKinley's case, and proved so puzzling to the attending staff, that some of them suggested that the bullet had been poisoned with the toxins of some bacteria, to insure fatal results. The following is a quotation from the report of H. R. Gaylord, on the autopsy: "The extensive necrosis of the pancreas would seem to be an important factor in the cause of death, although it has never been definitely shown how much destruction of this organ is necessary to produce death."

In hemorrhagic pancreatitis the demand for prompt operative procedure is as urgent as in fulminating appendicitis. The surgeon may reach the organ from the left, the right, above or below the stomach, or from the back through an incision in the left costovertebral angle. The two latter are the most successful for drainage. Early operation for drainage is necessary on account of the exudate. If no operation is attempted and the patient escapes immediate death, pancreatitis of a chronic form, retention cysts, purulent or gangrenous conditions are highly probable.

Wiessinger reports two cases diagnosed during laparotomy, from fat necrosis. Incision and drainage effected a permanent cure. This report is given one year after operation. Hones, in the *Lancet* of February 18, 1905, reports a case of acute hemorrhagic pancreatitis, recognized and operated upon successfully. The patient vomited, epigastrium was tender, with localized swelling, abdomen was distended, the pulse 128, temperature 96.2° F., peritoneal cavity contained three pints of bright red blood. There was fat necrosis in the lesser sac.

Chronic disease of the pancreas may develop from the acute; from purulent conditions or neoplasms in neighboring organs; by infection from the intestine, may result from general or local tuberculosis. Cultures of typhoid bacilli have been found in the organ following an attack of fever. It may result from excessive use of alcohol, developing with cirrhosis of the liver; at least 10 per cent. of the latter disease develop glycosuria. Gangrene of the legs is usually if not always accompanied by pancreatic lesions.

Several additional tests have been suggested for recognizing chronic pancreatitis. The presence of sugar in the urine shows its existence to be highly probable but not certain. Several feeding tests referring to obstruction of the duct, are as follows:

Pancreatic juice alone will digest the nuclei of muscle fibers; feed meat wafers and examine feces. Pancreatic juice only will break up salol; examine the urine for the end products of carbolic acid and salicylic acid. If this juice is absent fats will be found in the feces; examine stools. If the duct of Wirsung be obstructed, in 70 per cent. of cases the secondary duct of Santorini is incapable for various reasons of discharging much pancreatic juice.

Dieckhoff, who is a famous authority on the pancreas, reports the following 53 cases: Acute

pancreatitis, 5; chronic pancreatitis, 15 plus (4 of doubtful diagnosis); carcinoma, 4; degenerative atrophy, fatty degeneration and fatty tumors, 21; cysts, 4. Total 53.

Draper, of Boston, in 4,000 autopsies found 19 cases of pancreatic hemorrhage, in 10 of which no other cause of death could be found. That is to say, at least one death in each 400 is from a cause that most of us never attempted to recognize.

A study of diabetes is inseparable from a study of diseases of the pancreas. Cohnheim has shown that by grinding frozen pancreas and frozen muscle, and pressing in a powerful press, neither extract will dissolve sugar in the blood. But by mixing the two extracts the sugar is rapidly decomposed. Conclusion, the internal secretion of the islands of Langerhans circulates in the blood with sugar until the muscles are reached, where the action of a second ferment causes sugar to be oxidized, forming heat and energy just at the point where it is needed.

Not all diseases of the pancreas produce diabetes, and not all diabetes is produced by diseases of the pancreas. Diabetes may be caused by: (1) Claud Bernard's puncture of the floor of the fourth ventricle, and perhaps by other nerve lesions; (2) by administration of certain drugs; (3) deducing from Cohnheim's experiments, perhaps from muscle abnormalities; (4) the liver may cause an overproduction of glycogen.

Interacinar pancreatitis, which destroys the islands of Langerhans, causes diabetes. Interlobular pancreatitis may be far advanced, and yet not affect these islands and no diabetes appear.

Hansemann, in the Berlin Pathologic Institute, prepared the following report of 73 cases: Diabetes without diseases of pancreas, 8 cases; diabetes without any statement concerning pancreas, 6 cases; diabetes with diseases of pancreas, 40 cases; diseases of pancreas without diabetes, 19 cases. Total 73.

Of the 40 cases, 36 were simple atrophy, 3 were fibrous in duration, and 1 a complicated case.

Prophylaxis in pancreatic diseases, as far as known, is a short chapter. Limit the use of alcohol to avoid cirrhosis of liver and pancreatic disease; treat syphilis to avoid arterial sclerosis; above all, remove gall-stones without waiting for nature to pass them, and perhaps have the bile forced into the pancreas with fatal results.

Treatment.—Surgical treatment has given good results. When the head of the pancreas is distended, an opening into the gall-bladder, with drainage, has cured a series of cases with a mortality of only four per cent.; this seems to us a very indirect approach to the subject. Incision in the long axis of the organ, with drainage below the stomach, or through the left costovertebral angle, seems the most scientific treatment; the latter avoids entering the peritoneal cavity. We hope that the time has come when no surgeon on discovering fat necrosis in the abdominal cavity, will hesitate to drain the pancreas. These small white spots of necrosis, in the mesentery are sometimes mistaken for miliary tuberculosis and are caused by the fat-splitting ferment changing the fat into glycerin, which is absorbed, and fatty acids, which remain in the dead cells, and give them the peculiar appearance. Medical treatment is of little value. Pancreatic extract may be given to aid digestion; iron and mercury have been tried, but all efficient remedies yet remain to be discovered. They may be described in a sentence from Tennyson:

"The fair new forms,
That float about the threshold of an age,
Like truths of science waiting to be caught."

MALARIAL HEMOGLOBINURIA.[1]

BY LORIN A. GREENE, M.D.,
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IN this article the author makes no pretense of presenting any new or startling scientific discoveries, but intended simply to relate some few personal experiences with resultant deductions, in the hope that a discussion may be incited that may benefit those of us who have in the past, or may in the future, come in contact with this grave form of pernicious malaria.

The pathology of an ordinary tertian or quartian malarial infection, with its severe, yet rapid, cycle of development, is well understood by all, but in the pernicious forms of malaria the lesions are so varied and inconstant that some new clinical aspect presents itself in almost every case. The gross blood changes, as we all know, consist in a marked diminution of the red corpuscles and a diminution of the amount of hemoglobin even in those cells which do not contain parasites or their spores. There is, as a rule, a relative increase of the large mononuclear leucocytes.

In every estivo-autumnal infection, a few days after the initiatory symptoms appear blood examination reveals large numbers of the adult crescents. The exact nature of these bodies, until recently, was problematical. Recent research has shown that these bodies represent the highest development of the estivo-autumnal parasite, their peculiar function being the propagation of the species in a cycle outside the human body. It has long been a demonstrated fact that some of the more mature ameboid forms of the tertian and quartian parasites, and the crescentic form of the estivo-autumnal parasite, remain circulating in the blood without effort at segmentation.

However, if a fresh slide of this blood be taken and allowed to remain for a few minutes in a moist chamber certain phenomena occur which are not seen in a specimen examined immediately after its withdrawal. Some of the mature organisms liberate long flagella, which are actively motile and immediately enter other mature forms.

[1] Read before the Florida State Medical Society, at Jacksonville, Fla., April 19, 1905.

It has been observed in stained specimens that each flagellum contained some of the nuclear chromatin of its parent body, and that this chromatin in the flagellum united with the chromatin of the organism which was entered by the flagellum.

Under the same conditions the adult crescentic form pursues the same cycle, the male crescent giving off flagella, one of which in turn fertilizes a crescent slightly different in morphology, presumably a female crescent. This process is evidently sexual in nature, and as the phenomena have never been observed except in blood which has been for an interval withdrawn from the body, it is the natural conclusion that under ordinary circumstances fertilization takes place outside the human host. These conjectures have recently been verified and the process of fertilization and maturation has been demonstrated in the stomach of a mosquito, the genus *Anopheles*. After a patient with an estivo-autumnal infection is bitten by the mosquito, the parasites in the stomach of the insect undergo a complicated cycle of reproduction analogous to the one described as taking place in a fresh slide preparation, and the resulting spores or ameboid bodies are deposited in the salivary gland of the mosquitoes. Such an insect is then capable of transmitting to an uninfected person sporozoites sufficiently developed to require only a few hours for blood destruction to commence after their introduction. These spore forms enter the red cells immediately and may be distinguished from the ordinary ameboid forms by their oval outline and the abundance and coarseness of their pigment. After a few hours these forms disappear and a little later, when we have every clinical evidence of an estivo-autumnal infection, we may not be able to verify our diagnosis by the demonstration of the parasite or its spore. But we do find a general granular degeneration of red cells and a marked phagocytosis, which is an expression of nature's effort to dispose of free hemoglobin from cells that have been disintegrated by some powerful toxic agent from an apparently remote depot of infection.

Pathologically a hemoglobinuria is simply the presence of free hemoglobin in the urine, resulting from the disintegration of the red blood cells by the *Plasmodium malariæ* or some associated agent. In a number of cases that I have seen I have been firmly convinced that the agent which wrought such terrific destruction with the blood elements was not the parasite itself, but some toxin, the existence of which depended either on the assistance or presence of the *Plasmodium*. It has been observed by many on blood examination that granular degeneration of red cells unoccupied by parasites has been more marked than of those acting as a temporary host for a *Plasmodium*. The question might be asked why do we not have a hemoglobinuria as a symptom in every case of remittent malaria? While it is indisputable that we have a liberation of hemoglobin in every case, in the milder infections, or those of short duration, the free hemoglobin is converted by the relatively healthy liver into bilirubin. But in those cases of long duration or greater intensity the congested condition of the liver prevents that organ from performing its function, and the free hemoglobin is as a physiological necessity eliminated by the kidney.

In every discussion of this subject in which I have participated or been an auditor, the chief point of difference has been in regard to treatment. Some advocate the use of quinine exclusively, while others hold that quinine causes the hemoglobinuria and oppose its use in any case. In my own experience the use of quinine depends altogether on the stage of advancement of the case when seen by us.

We have shown in the paper that the estivo-autumnal parasite develops, but does not reproduce in the blood. We have also shown that the sporozoites leave the blood current early and that after they begin to disappear, and never before, do the hemoglobinuric symptoms appear. Therefore, knowing as we do the specific action of quinine on a blood-borne parasite, the immediate hypodermic injection of quinine is indicated when we find the spore forms in the blood or know from previous examination that they have not long since disappeared. Unfortunately we are often prevented from this procedure until the rapidly manufactured toxins are about to commence active blood disintegation, and then the appearance of hemoglobinuria immediately after the administration of quinine gives rise to the fallacy that the drug is the causative factor of the symptom. Therefore I would advocate the hypodermic use of quinine in every case of estivo-autumnal malaria before the appearance of hemoglobinuria. And after the first hemoglobinuric paroxysm, if the drug has not been previously administered, its administration is justifiable in the hope that some few spores may be retarded in development and the sources of the toxemia numerically diminished. But after a thorough cinchonization, if the hemoglobinuria continues, I fail to see the rationale of the continued use of quinine. After the disease has progressed thus far without any abatement of the symptom, we have a condition similar to many other systemic infections and should treat it accordingly.

It has been my practice to commence early with the hypodermic injection of bichloride of mercury and continue its use at indicated intervals throughout the attack. Although it is argued that stimulation of an engorged organ is bad therapeusis, nevertheless the powerful hepatic stimulation brought about by the use of bichloride of mercury is an imperative necessity. Calomel in large and oft-repeated doses is a valuable adjunct to treatment from an empirical standpoint, at least. It is necessary that

the excretory functions be maintained. The intravenous use of the normal saline solution has been most useful in my hands, and has in a number of instances brought about a reaction in patients almost moribund. The hyposulphite of soda in saturated solution has been highly recommended, but has in my experience proven of doubtful efficiency.

Thus, after the proper administration of quinine, the condition should be treated as any other condition where we have a systematic toxemia due to some localized lesion, viz., typhoid fever or lobar pneumonia. That is to say, our treatment should be directed along expectant lines maintaining stimulation and promoting elimination.

THE DOCTOR AND THE PUBLIC SCHOOL.[1] [2]

BY THEODORE TOEPEL, M.D.,
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THE purpose of this paper is mainly to call to the physician's attention the child and its environment during its school life from six to fourteen years. Though not every physican is a politician, yet his professional standing carries sufficient weight to influence public opinion. A great amount of good would result if doctors in general would interest themselves more in the child at school. I am sure they are just as capable of filling positions on Boards of Education as men of other professions, especially when one considers that in school matters the prime aim to be promoted is the child's physical and mental welfare.

If we take the child at six years of age, when he first enters school, and note the change of conditions which take place, we are astonished at the physical and mental changes occurring during this first year at school. A child is removed from the home surroundings, where he was accustomed to be natural in action and speech, where the little body had a chance to grow, where the mind could develop at will. This child of free play is now crowded into a room with fifty-nine others. He must learn to sit still in his desk, a limited space of two by three feet. He can move by command only, and talk only when he is asked. Is it not evident to every rational thinking physician that this change should be carefully and gradually made? Would it not be better to take these little folks at six, and put them into a large room devoid of desks, where there is better opportunity for free exercise? The establishment of kindergartens, with their preparatory course for the regular school work, should be more universal in the city schools of the South. The expense of equipping and maintaining these kindergartens is small, when measured by the great amount of good derived from them.

The curriculum, as it is now made up, is very heavy for grammar school children, and is very frequently the cause of physical retardation and nervous breakdown. Not only does the pupil suffer, but the teacher very seldom escapes the evil results of overwrought nerves in the attempt to accomplish all the work the curriculum calls for. The cry of alarm should be sounded by the whole medical world in opposition to this grinding system. Wisely thinking pedagogues have shown the way of ridding the curriculum of all that is merely theoretical, not practical and useful, and have pointed out what should be taught our school children. They have chosen those things which eventually are conducive to the betterment of the people physically, mentally and morally. These men, true educators, as it were, should have the loyal support of the physician, for he is the one man who sees the results of wise or unwise education, being the confidential counselor in many familes.

I take for granted that we are dealing with children of families where they were properly cared for. We shall find that, before the child was sent to school, he received his breakfast at 8 o'clock, a light lunch at 10 and a warm dinner at 12, or not later than 1 o'clock. Note the change after he has entered school. It is customary in the South to have one long session. That means the children must report at school at 8.15 A.M. and be dismissed at 2 P.M., with one-half hour recess. This gives five hours spent in the school-room. The child now has breakfast at 7 o'clock, he takes a cold lunch with him, which is eaten at 11 o'clock, leaves school at 2 in the afternoon, and, if he is fortunate in having a careful mother, he receives a little warmed-up food at 3 o'clock; otherwise, he waits for a warm meal at supper time. It is evident that the physical and mental development of children fed in this manner cannot be normal. It is convincing that the results of irregular feeding during three-fourths of the period of growth and development will manifest themselves sooner or later in some form of disease. Should not this question of proper feeding receive the attention of the physician? Would it not be better for pupils and teachers to have a warm meal at 12 o'clock, and at least an hour and a half for rest and recreation between sessions?

Unfavorable physical conditions are prone to foster contagious diseases, and the greatest care should be exercised, on account of the susceptibility of school children, not to expose them to such. Realizing the importance of this, many authorities have appointed regular visiting school physicians, whose duty it is to visit the schools daily, and examine all children whom the teacher has sent to his office in the school suspected of having any contagious disease. In New York an inspector must make his visits to the school assigned to him before 10 A.M. He first examines the children isolated by the Principal, and also the children who have been absent

1 Shaw's School Hygiene.
2 Read before the Georgia State Medical Society, Atlanta, Ga., April, 1905.

from school for a few days. Once a week he makes a routine inspection, consisting of a class to class examination of each child present. The children march by the inspector, pull down their own eyelids and open their mouths wide. Any one suspected of having any trouble is ordered to the inspector's office for a more thorough examination. By this method many unreported contagious diseases have been found. Defects of sight and hearing are systematically sought for once a year among all pupils. We know that the way to prevent disease is to teach the people the primary cause of it, and how to avoid contact with the causative agent. In the public schools the children should be taught more of the practical things that will be of use later in life, and less of the useless things, which they forget as soon as they leave school. Half an hour a week during a child's whole school period devoted to a good common sense talk on personal hygiene is of greater benefit to a child than all the memorizing of physiology as it is at present taught. Instead of putting literature into the hands of children on this subject, facts should be put into their heads.

The conclusions drawn from physiological investigations made in Europe and America into the distortion of the body, caused by the demands of school life, are startling in the extreme. Every condition should be eliminated which makes possible the acquiring of physical defects in school, as well as the accentuation of those defects which the child may have had before entering school. Improper chairs and desks, not conforming to the size of the body, must not be allowed in the room. I have seen children varying in height twenty-two inches seated at desks and in seats exactly the same in size.

A few words will be appropriate in connection with this paper as to the room and schoolhouse, where the child spends five hours daily for eight years. I will picture to you a standard school-room, as now required by many of the larger city school systems, and if any of the physicians present have received their primary instruction in a place with similar advantages they are fortunate. The school-room should be the unit to be considered first in planning a school building; it should not be a building cut up into school-rooms. A school-room must be so planned as to give to the pupils who are to occupy it what the laws of health demand. A standard school-room is thirty feet long, twenty-five feet wide, and thirteen feet high. Of the primary grades forty-eight pupils are seated in a room of this size, each pupil having fifteen square feet of floor space and a little more than 200 cubic feet of air space. In the grammar grades (fifth, sixth, seventh and eighth grades) forty pupils occupy a room of the same dimensions. Here every pupil has 18¾ square feet of floor space and 243¾ cubic feet of air space. The amount of glass surface to light the room well should be one-fourth of the floor space of the room, or 187 square feet, and there is an unanimity of opinion that the light should enter from the left. The color of the walls and ceilings should be of a greenish gray tint; the window-shades should be of the same color, but somewhat darker. Properly sloped desks, chairs with backs, both having some mechanical contrivance which will admit of their being raised and lowered to accommodate the difference in size in pupils and rapidity in growth, should be in every room. They should be placed in such a manner that the aisles run the long way in the room. Every child should have 30 cubic feet of fresh air every minute at a temperature of 70° F. The sanitary conditions of the school building should be the best that money can afford. There should be well-lighted closets, with the best plumbing; the floors in these places should be of hard asphalt. Special care should be exercised in regard to pure drinking water; the use of individual cups should be encouraged. Besides the daily cleaning of the school-house, the floors should be scrubbed twice a year; the walls and woodwork should be wiped and painted annually. Desks and seats are accumulators of dirt. They should be thoroughly cleaned with kerosene during vacation. Some of the progressive school boards of this country have instituted school baths like those of many European schools, the object being to teach cleanliness and physical exercise. The school buildings should be constructed of the best materials, put together in the most substantial way, and with the best workmanship available. They should be located most conveniently as to distance for the greatest number of pupils. They should be away from noise and polluted air. The site chosen should be elevated and well drained. The playgrounds should be on the sunny sides, and they should be covered with natural gravel.

The aim of education is to develop the child physically, mentally and morally, to make a worthy member of society and a patriotic citizen. The child's mental education has been well taken care of, and it is time that a vigorous crusade be made to do justice to the physical child. Owing to progress in science, we have come to appreciate more generally the truth of the saying: "Mens sana in corpore sano" (a sound mind in a sound body). It is time for the physician to interest himself in the great problem of a healthy education. The physician, who interests himself in school matters, is better qualified than many others to judge wisely on matters pertaining to school and those conditions which undermine physical development. With his knowledge of the human body, and the amount of work which each organ is able to perform, he is able to call attention to the needed periods of rest between studies; he can make good suggestions as to the improvement of hygienic conditions of school-rooms, buildings, etc., thereby removing indirectly many causes of disease, and by practising these preventive

measures he can make himself invaluable to the community. Let the doctors of this body unite in the endeavor to improve the environment of the child at school, thereby assisting in rearing a stronger generation of men and women, who are better able to perform conscientiously the many duties of an upright, noble life.

A CASE OF CERVICAL SPINA BIFIDA—SYRINGOMYELOMENINGOCELE WITH HYDROMYELUS AND HYDROCEPHALUS.[1]

BY D. J. DAVIS, M.D.,
OF CHICAGO.

THE reasons for reporting this case are chiefly two: (1) The uncommon occurrence of spina bifida in the cervical region, and (2) the very unusual and rare form of the condition met with in this instance. A brief report of the clinical history is as follows:

Female child, aged eleven weeks. Entered St. Anthony's Hospital April 10, 1904. It was the illegitimate first child of a mother aged nineteen years who was healthy in every way. The child was bright and active and gave absolutely no indication of any paralysis. There was a moderate degree of hydrocephalus with some bulging of the eyeballs and rather large fontanelles. Low down in the cervical region in the median line posteriorly was a tumor about the size and shape of a half lemon, slightly constricted at the base and projecting downward. This gave evidence of a distinct fluctuation, was elastic, rather tense, and could be compressed. The whole was covered by a skin distinctly thinner than normal and on the dependent side of the mass examination revealed a small dimple in which no opening could be detected on gross examination. No other deformity in the child was noted.

An operation was performed for the removal of the sac on the morning of April 14. An incision was made through the skin near the base of the tumor. None of the arches of the vertebræ were absent and an opening was seen about the size of a lead pencil between the seventh cervical and first thoracic vertebræ, through which passed a pedicle leading from the sac containing a fluid into the vertebral canal. In attempting to follow down the pedicle the sac was ruptured and a quantity of clear fluid escaped. The pedicle was followed down to within 1 cm. of the spinal cord and there ligated and cut. The sac and pedicle will be described later. The whole tumor was removed and the wound closed. The child's temperature soon began to rise after the operation and on the night of April 15 it died in convulsions, the temperature reaching 107° F. shortly before death. An autopsy was held the following morning and an anatomical diagnosis made as follows:

Acute fibrinous spinal and basilar leptomeningitis. Recent infected wound between scapulæ. Spina bifida of the cervical region. Internal hydrocephalus. Suppurative inflammation of the ventricles of the brain. Bronchopneumonia of the right lung. Acute parenchymatous degeneration of the heart, liver and kidneys. Hemorrhage into the spleen. Cysts of the ovaries. Uric acid infarcts in both kidneys.

Bacteriological examination was made of fluid obtained from the ventricles of the brain, the subdural space of the spinal cord, the peritoneal and pleural cavities and of the heart's blood and some bloody fluid about the operation wound. From all these sources the *Staphylococcus pyogenes albus* was obtained in large numbers and practically in pure culture. Smears made directly from the fluids except the heart's blood showed gram-staining cocci. They were especially numerous in the fluid from the lateral ventricles and from the subdural spaces of the cord.

The internal viscera generally showed nothing of importance beyond the marked acute degeneration due to the severe infection, and it is to the changes in the central nervous system that attention will be chiefly directed.

The head was considerably larger than normal, the fontanelles being very prominent and the cranial bones slightly separated. On opening the cranial cavity the brain was found to be very soft and the pia was hyperemic throughout. A few flakes of fibrin were seen at the base and along the course of the middle cerebral artery on both sides. The lateral ventricles, the third ventricle, the foramina of Monro and the aqueduct of Sylvius were all very much dilated and contained a purulent fluid. The thickness of the cortex of the brain in the region of the motor area measured from 1.5 to 2 cm. The ependyma lining the lateral ventricles was thicker and more resistent than normal.

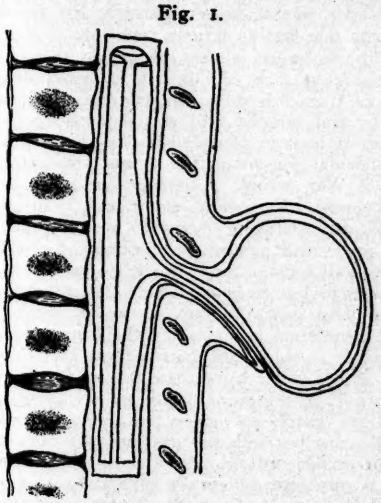
A recently sutured wound 4 cm. in length was present at about the level of the first thoracic vertebra. On cutting down upon the spinal cord some clotted blood was found outside the meninges. The dura was much distended by a purulent fluid and its inner surface was pink in color. The pia was very hyperemic and in places small flakes of fibrin adhered to it, especially in the portion near the seat of the operation. The vertebral canal was perfectly formed throughout except for the slight deformity above noted.

Spinal Cord.—The upper cervical, the greater part of the thoracic and the lumbar portions of the cord showed no changes on gross examination. At the level of the eighth cervical nerve there was a pedicle about 5 mm. in diameter projecting from the posterior surface of the cord. The base of this pedicle was broad and was formed largely by two ridges running up and down the cord corresponding to the posterior columns. This prominence of the posterior columns extended about 2 cm. above and below the pedicle. The length of the pedicle was nearly a centimeter, it having been sectioned at this point during the operation as already described. This short stump attached to the spinal cord on cross

1 From the Pathological Laboratory of Rush Medical College.

section was seen to be made up of three parts arranged concentrically. On the outside was the firm dura directly continuous with that of the spinal cord. Inside this was the delicate pia and in the center was a cord which showed on close examination a small opening in its center which apparently led into the central canal of the spinal cord. The sac removed at the operation showed on examination a smooth and rather tough lining directly beneath the integument. This ran down into the pedicle and though on account of the operation it could not be directly traced to the dura there can be no doubt that it is a continuation of this membrane. On the lower side of the sac beginning beneath the skin at a point just opposite the dimple is a small cord about a millimeter in diameter which runs along the margin of the sac and down into the pedicle, this being a continuation of the central part of the stump attached to the spinal cord. On microscopical examination this cord is seen to be a tube

Fig. 1.

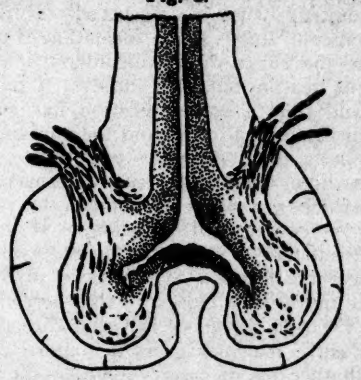


having a lining at least part of the way identical in structure with the skin and even showing sebaceous glands.

Figure 1 represents diagrammatically the relation of the various structures in the malformation, showing particularly the tube leading from the surface to the central canal and also the meningocele in relation with the subdural space.

Sections were made of the spinal cord directly through the pedicle and about 1 cm. above it; also through the upper cervical and through the lumbar and thoracic portions of the cord. The section of the cord through the pedicle (Fig. 2) shows a very much dilated canal triangular in shape, branches going out in the direction of the vertebral horns, and the other branch extending posteriorly, obliterating the posterior septum of the cord and passing into the tube of the pedicle. The fila of the nerves are not interfered with, and the posterior columns of the cord are simply pushed laterally. The ependyma of the central canal is well formed and may be seen extending for a distance into the pedicle. Around the central canal is a broad zone which is shown by special staining to be made up largely of neuroglia tissue. The section (Fig. 3) made about 1 cm. above the pedicle shows a central canal of much the same form. The canal here has also three horns, the posterior on passing up between the posterior columns pushing these outward and

Fig. 2.

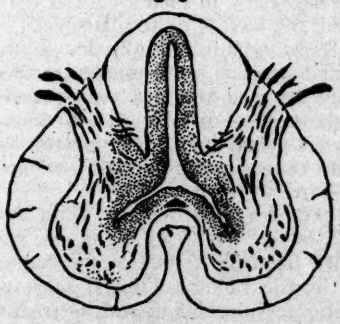


thus producing the ridge already referred to and the peculiar form as shown in the figure.

Sections through the lumbar, thoracic and upper cervical cord show a dilated central canal, it being especially marked in the cervical region. Sections at the various levels stained by the Pal-Weigert method show absolutely no degeneration of any of the fibers in the various columns.

To summarize, then, we have a condition of the central nervous system which shows a dilatation of the ventricles of the brain and their various communicating passages, a dilatation of the central canal of the spinal cord, and at the

Fig. 3.



level of the eighth cervical nerve a narrow tube leading from the central canal through a pedicle and opening on the lower side of the sac at the site of the dimple. The sac has a smooth lining which is apparently the dura and being in communication with the subdural space of the spinal canal may be considered a dilatation of the meningeal space. This is evidently then a meningocele, and because of the dilatation of the central

canal and the extension from the cord of a pedicle, the whole may be spoken of as a syringomyelomeningocele in combination with hydromyelia and internal hydrocephalus. There is therefore a general dilatation of all the cavities of the central nervous system with deformity of the spinal cord.

The above lesions indicate an imperfect development of the nervous system and from an embryological standpoint there is little difficulty in understanding what has occurred. During the developmental stages in the formation of the neural tube the edges of the medullary folds have for some reason failed to unite at a particular point and thus a communication has remained between the central canal and the surface. This very simple relationship as exemplified in this case in direct contrast to many cases of spina bifida which are often so difficult to interpret clearly is worthy of mention. It may be pointed out that it is in the upper dorsal region very near the location of the lesion in this case that the mural tube closes. From here the closing of the tube advances in either direction and consequently malformations are more common either higher up or lower down in the lumbosacral region.

The possibility of a rupture of the cord having occurred during fetal life, thus establishing a communication between the central canal and the outside, may with propriety be considered in this case. The delicate ventricles and central canal signifying probably an increase of pressure in these cavities, would tend to support such a consideration. This assumption would be in accord with the ideas of Förster and other German writers who look upon many cases of spina bifida as due to a dropsy of the central canal. Although it is difficult in many cases of spina bifida to understand how such a process might operate to produce the result, in such a case as the one here presented, the idea is quite plausible.

Von Recklinghausen thinks that most cases of spina bifida are due to an unequal growth of the canal and the cord and as a consequence a bending of the cord occurs in order to accommodate itself to the spinal canal; but this can apply only in certain cases and apparently need not be considered here.

The literature is particularly scant upon cervical spina bifida. As to its rarity one may obtain some idea from the report of the committee appointed by the London Clinical Society in 1885 to investigate spina bifida and its treatment. In a series of 125 specimens examined from various museums, not one case of pure cervical spina bifida occurred. In a series of 243 cases collected from the literature or specially reported to them the location of the tumor was stated in 226 and in this number there were 9 cases of cervical and 2 of cervicodorsal spina bifida; 4 of these 11 cases had hydrocephalus. Clutton [1] reports a case almost identical with the one here reported except that there was some dilatation of the pedicle of the cord about the meningeal sac; also there was no hydrocephalus and no hydromyelus except a slight dilatation of the central canal near the pedicle. Von Langenbeck has also reported a case of cervical spina bifida with a fissure leading into the central canal and with hydrocephalus. A number of cases of cervical spina bifida have been reported by surgeons, but as a rule a careful study of their structure had not been made and they were reported as simple meningoceles.

1 Trans-London Clinical Society, 1886.

MEDICAL PROGRESS.

MEDICINE.

Dangers of Illuminating Gas.—The perils of the domestic use of modern fuel and illuminating gas, now so generally used, are pointed out by Dr. H. LEFFMANN (*Journal A. M. A.*, June 3). The coal gas formerly employed was comparatively non-toxic, and its characteristic odor was a danger warning, but the modern water gas that has so largely replaced it in common use, with its larger content of carbon monoxide and its comparative lack of odor, is far more dangerous. Accidents from this cause are far more frequent than formerly, and carbolic acid and illuminating gas have replaced, at least in Philadelphia, he says, for suicides and accidental poisonings, the arsenic and laudanum of the Civil War period. A sleeper can easily absorb a fatal amount of modern water gas without being aroused, and Leffmann shows by a simple calculation how a very small percentage of carbon monoxide—less than one-half a grain, for example, to 100 c.c. of blood—can render useless its hemoglobin. Gas stoves for cooking are used generally only in warm weather when natural ventilation is good, and the danger from them is therefore lessened, but their burners are seldom furnished with a collar to regulate the air supply, and the combustion is therefore liable to be irregular and deleterious gases are given out. Gas "stoves" or heaters connected with the gas pipes by rubber tubing are objectionable on account of the liability of leakage, which is very great unless the very best tubing material is used. The stopcock on the heater is especially objectionable, as it is the one most convenient to use, and when used the leakage through the tube can go on unchecked. The precautions recommended by Leffmann are: Prevention of sale of inferior tubing; having no stopcocks on heaters unless they are connected to house mains by metal pipes with tight joints and such construction as will prevent the rubber tube, even when of the best quality, remaining in free connection with the house main when the gas is not lighted. He would also have heaters constructed so as to give a larger radiator effect with a given gas consumption, and would have them placed only where the products of combustion can escape freely into the chimney. All burners on the Bunsen principle should be provided with collars to regulate the air supply, and purchasers should be instructed in their use. The commonly used illuminating mantles may also be objectionable by interfering with combustion, especially when worn or displaced, and the flexible tube of the ordinary drop-light be also a source of danger like that of the heater.

Chronic Acetanilid Poisoning.—D. D. STEWART (*Journal A. M. A.*, June 3) reports two cases of acetanilid addiction, one of them at considerable length, and

refers to others in the literature. The symptoms in the severer cases of chronic poisoning by the coal-tar products are, he remarks, very similar as regards mental and physical debility. There is cardiac weakness, more or less pronounced cyanosis, and blood changes characteristic of the action of a hemolytic agent. But for the leucocytosis, the blood conditions would almost suggest pernicious anemia with their dimunition of the erythrocytes and changes in their size and shape, the presence of erythroblasts, often in larger numbers than pernicious anemia, of polychromatophilic cells, and of cells undergoing protoplasmic granular degeneration. There is usually a notable increase of blood plaques and a leucocytosis is common, the increase, it is reported, being usually in the polymorphonuclear elements. In Stewart's cases, however, which were uncomplicated, there were 37 and 35 per cent., respectively, of lymphocytes. He thinks that possibly in other cases there might have been some complicating disease influencing the leucocytosis and the proportion of polymorphonuclears. In Cabot's case, complicated with nasal carcinoma, while the blood had the characteristic chocolate hue, and the hemoglobin was therefore not estimable, there was a leucocythemia. Erythroblasts were lacking, methemoglobin was demonstrable in both blood and urine, and the patient's general condition was good in spite of the evident cyanosis. Such a case might superficially suggest, he says, the condition that has lately attracted considerable attention, chronic cyanosis with polycythemia and enlargement of the spleen. The difficulty sometimes attending the diagnosis in these cases has been noted by others, and stress has been laid on the characteritic anemia, etc.

Tumor of the Third Ventricle of the Brain.—R. T. WILLIAMSON (*Med. Chronicle*, May, 1905) adds one case to the eleven in the literature on this subject. While the presence of an intracranial growth was diagnosed during life, its exact location was only determined post mortem. The case recorded by the author presented simply the general symptoms of intracranial growth for a long period; the mental condition was not affected until the terminal coma commenced to develop; and indications of affection of the third, sixth and fifth cranial nerves did not occur until the last few weeks of life. In the eleven cases of tumor of the third ventricle which the author has collected from the literature, the nature of the tumor was as follows: sarcoma, 2; carcinoma, 1; papillary carcinoma, 1; papillomatous tumor, 2; colloid cystic tumor, 1; epidermoid cyst, 1; fibroid tumor, caused by mycotic infection, 1; chondrocystosarcoma, 1; actinomycosis, 1.

Hepatogenous Levulosuria.—The action of the various organs upon some sugars has been tested by E. SEHRT (*Zeitsch. f. klin. Med.*, Vol. 56, Nos. 5 and 6). Desiccated spleen, liver, etc., had very little influence upon glucose, but with pancreatic powder active glycolysis took place. This was still more marked if muscle power was also added, no matter if a third organ was present or not. It follows that the decomposition of glucose within the body probably requires the action of both pancreas and muscle. The extracts of these two tissues are, however, unable to split up levulose, and the experiments of the author prove that this property is possessed to a slight degree only by the liver and the salivary glands. This will explain why, with deranged function of the liver, levulose will appear in the urine if a certain amount of this sugar be given by mouth.

Nature of Diabetes Insipidus.—Careful study of several patients suffering from insipid diabetes, by ERICH MEYER (*Deutsch. Arch. f. klin. Med.*, Vol. 83, Nos. 1 and 2), tend to throw a good deal of light upon the nature of this obscure disease. It was found quite constantly that if patients secreting 10,000 or more c.c. of urine are put on a certain diet the amount of urine will often fall as low as 3,000 c.c. without giving rise to disagreeable symptoms. This diet consists solely of carbohydrates and fats, some fruit, preferably applesauce, being permitted to quench the thirst. If meat or salty food is given during this treatment the amount of urine voided will again increase rapidly. If the total daily quantity of urine be examined before and during treatment it will be found that while the amount varies very much the total quantity of nitrogen and chlorides excreted will remain about the same for the twenty-four hours. It may be stated, therefore, that diabetes insipidus is an affection of the kidneys, which does not enable these organs to void the urine in its normal concentration. To avoid retention of excrementitious matter more water will be necessary, and hence the thirst will be excessive. It is absolutely wrong to deny these patients water, since serious disturbances will follow. The diagnosis of diabetes is occasionally difficult since hysterical polydipsia, non-bacterial pyelitis and other conditions may give rise to the same symptom complex. Much information can here be obtained by changing the diet and by giving salt: if a nitrogenous diet and a dose of 20 grams of salt are followed by a marked increase in the amount of urine with little change in the concentration the case is most likely one of insipid diabetes, while if there is no pronounced variation in the amount, but a higher percentage of salt and nitrogenous matter, another diagnosis must be made. The ability of the kidneys to excrete concentrated urine, if the amount of excrementitious matter in the blood is large, is called the concentrating power; the reverse, the diluting power. In parenchymatous nephritis both the concentrating and the diluting powers are very much diminished; that is, the food and the amount of water ingested change the amount and the concentration of the urine but slightly. In interstitial nephritis the concentrating power is much diminished, but the diluting power almost normal. In hysterical conditions both concentrating and diluting powers are normal, while in insipid diabetes the concentrating power is lost altogether, but the diluting power is normal. A slight increase in concentration may, however, be brought about here by means of therapeutic doses of theocin. Phosphate of soda will not increase the amount of urine either in health or in diabetes insipidus.

Cyanosis of Enteric Origin.—A very peculiar symptom complex was described several years ago under the name "autotoxic, enterogenous cyanosis." The patients exhibit a marked cyanosis of the skin and the visible mucous membranes, the end phalanges of the fingers are enlarged and a severe diarrhea is generally present. Spectroscopic examination of the blood showed a broad band in the red portion of the spectrum, which was generally attributed to methemoglobin. Subsequent reports of similar cases have not been very numerous, but A. A. HIJMANS and V. D. BERGH (*Deutsch. Arch. f. klin. Med.*, Vol. 83, Nos. 1 and 2) have been so fortunate to observe a child with atresia ani and urethro-rectal fistula, which presented all the typical symptoms. By careful examination of the blood it could be determined that the cyanosis was not due to methemoglobin, but to sulf-hemoglobin, a compound of hemoglobin and sulphureted hydrogen, absorbed from the intestines.

The amount of gas in the blood was too slight to be detected by chemical means, but the spectrum of the artificial product corresponded in every way with that of the blood. Besides, a large amount of sulphureted hydrogen gas could be obtained from the artificial cultures of the bacteria isolated from the intestines. The gas occurs normally in the intestines of all individuals, but absorption to any degree does not take place unless very large amounts are formed, or unless, like in this case, the intestines are distended, owing to obstruction below.

Prolonged Fever of Unknown Cause.—Every physician will occasionally encounter prolonged febrile conditions which do not permit of a diagnosis, despite the most careful examination of the patient. Some of these cases turn out to be chronic, septic endocarditis; in others, the temperature is due to latent tuberculosis or to pyelitis. The development of malignant tumors, particularly of the stomach and the mediastinum, may give rise to temperature and the tertiary stage of syphilis, especially if gummata are present in the liver, may be the cause of the fever. The case of V. KRAUSE (*Deutsch. Arch. f. klin. Med.*, Vol. 83, Nos. 1 and 2) deserves to be put on record since a diagnosis was impossible even after the autopsy. The chief symptoms were marked chill, profuse perspiration, slight cough and expectoration, developing directly after a severe exertion. The subsequent fever was of intermittent type, but repeated examination of the organs and of the blood and the various excreta failed to reveal the cause. The cachexia gradually increased and after several months the patient died. All the organs were examined microscopically and bacteriologically, but no characteristic lesions or bacterial growth could be obtained. In conclusion, the author draws attention to the value of blood-cultures; in another obscure case on the type of recurrent fever, a pure culture of proteus could be obtained.

Blood-Cultures in Gonorrhea.—In cases of gonorrhea with complications, A. PROCHASKA (*Deutsch. Arch. f. klin. Med.*, Vol. 83, Nos. 1 and 2) recommends that blood-cultures be made since he has found them quite often positive; 10 c.c. or more of blood are removed from a vein at the bend of the elbow and added to 200 c.c. of a mixture of ascitic fluid and broth in the proportion of 1 to 3. In several days an iridescent membrane will form on the surface of the culture medium, made up of characteristic gonococci. It is a mistake to believe that cases with positive findings will always be fatal, since as many as four out of six cases observed by the author recovered. The complications which led to an inundation of the blood with germs were: Suppurating inguinal nodes with erythema nodosum, polyarthritis with endocarditis, and lastly, purulent meningitis.

Curschmann's Spirals in Bronchial Asthma.—Although Leyden was the first to demonstrate in 1872 the presence of special spiral bodies in the secretions of bronchial asthmatics, it was not until Curschmann, in 1883, defined their diagnostic value that the real nature of these new formations became more or less clearly established. According to him, a bronchial secretion that contains spirals is a clear indication of an impending asthmatic attack. PREDTECHENSKY (*Prak. Vrach*, March 19, 1905) reports the case of a patient who had been a sufferer from asthma for the last fifteen years. She expectorated daily two tablespoonfuls of a viscid mucus that contained Curschmann's spirals, a number of Charcot-Leyden's crystals and a great quantity of eosinophile bodies. By a method of his own the author succeeded in staining and isolating the spiral bodies from the patient's secretion and arrives at the conclusion that they are simply accumulations of mucus or mucopus extended to a great length and turned upon a longitudinal axis; the various forms of these spirals simply depend on the length of the filaments and the degree of revolutions around the axis. The principal constituents of these bodies are the eosinophile-leucocytes, the mucus forming mainly the connective element. The spirals, however, are not specific for bronchial asthma, but the special bronchial secretion out of which these spirals are formed during an attack of asthma, as it consists of mucus and an enormous number of eosinophiles which later give rise to the Charcot-Leyden crystals. The attack of asthma is evidently a secretory neurosis due to disturbance of the function of the sympathetic nerve. With this there is also a motor neurosis—a tonic spasm of the bronchial muscular fibers, as evidenced by the peculiar dyspnea of an expiratory type.

Cirrhosis of the Liver.—In speaking on the etiology of this subject, R. SAUNDBY (*Practitioner*, June, 1905) states that many cirrhotic livers are met with from many sources of origin. The chief and nearly invariable cause of the condition is the excessive use of alcoholic drinks. It has been suggested by some writers that the true cause is not the alcohol, but some other substances present in association with it. Lancereaux, for example, has pretended that it is due to the potassium sulphate resulting from the plastering of wine, but the disease follows the abuse of such different kinds of alcoholic drinks, *e.g.*, gin, rum, whisky, liqueurs, wine and beer, which, having alcohol in common, vary otherwise so much in the material from which they are manufactured and the processes they undergo that the ordinarily received opinion seems to be the most reasonable. This view by no means pretends to explain the pathological process, or shuts out the possible agency of microbes, or their toxins, especially the *Bacillus coli communis*, as suggested by Adami and others. The effect of the alcohol may be to depress the vitality of the liver cells and thereby favor the invasion of that organ by the intestinal bacteria. Adami has shown that dead specimens of the *Bacillus coli communis* may be found in any section of normal liver, but in the cirrhosed liver of man and cattle these organisms are not only present in numbers, but full of vitality. It is also possible that the abuse of pepper and spice by Europeans in tropical climates aids the effects of alcohol on the liver, for Tinozzi has shown that the addition of pepper or capsicum to the food of dogs and rabbits causes, after a certain time, a distinct increase of the hepatic connective tissue. It was formerly usual to attribute the "liver," which the old-fashioned Anglo-African brought home with him, to the abuse of curries and pilans, and it is possible that we are not quite right in looking so exclusively to alcohol and malaria as the causes of tropical liver, although the above-named dishes are not so gernerally used in India as they were a hundred or even fifty years ago. The author considers that the symptoms of alcoholic poisoning show themselves many years earlier in the nervous system than in the functions of the liver. He does not consider that alcohol is late in attacking the liver, but the point is that cirrhosis of the liver does not cause any marked clinical symptoms in its earlier stages, and passes for years unperceived. In fact, men in apparently good health have been known to die suddenly from some other

cause, or have been seized with a first but fatal hematemesis, and on post mortem the liver has been found to be in a state of extreme contracted cirrhosis.

SURGERY.

The Choice of Methods for the Radical Cure of Prostatic Enlargements.—The complete removal of the prostate has been attended with remarkable success as well in patients of advanced age and enfeebled by long suffering, as in men between the ages of fifty and sixty years, whose general health has not been much impaired by their local diseases, so that to-day it is merely a question of which method offers the best results and the lowest mortality. JOHN C. PARDOE (*Med. Mag.*, June, 1905) reviews the different methods of treatment and considers the advantages and disadvantages of each. The author is inclined to the belief that the suprapubic route gives the best practical results. The salient points about this operation are: (1) The speed with which it can be accomplished; (2) the incision into the bladder can be made of a size to suit the delivery of any sized prostate; (3) the fact that the compressor urethra is not damaged if the operation is properly performed; (4) the ease with which coexisting calculi can be removed; (5) the completeness of relief given to the obstruction, and, so far as we know at present, the permanence of this relief; (6) the complete absence of sequelæ, such as stricture and incontinence. The objections to this operation are: (1) Difficulty in the control of hemorrhage; (2) the enucleation is done entirely by the sense of touch; (3) the destruction of the common ejaculatory ducts; (4) drainage, often of a very septic cavity, has to take place against gravity and through two wounds; (5) it is necessary for patient to remain in bed at least a fortnight to three weeks. The operation by the perineal routes are of two types, the deliberate dissections and the rapid enucleations. The advantages claimed for perineal operations are that everything is done under the guidance of the eye, all hemorrhage is stopped as it arises, the bladder cavity is not opened and dependent drainage is secured. The disadvantages are: (1) It is long and tedious; (2) complete enucleation is not always performed; (3) recto-urethral and recto-vesical fistulæ are too common; (4) dense strictures are liable to result; (5) permanent incontinence is a frequent sequelæ; (6) on account of the narrow space it is often extremely difficult to remove large prostates. In the treatment of hard, contracted prostates, which cannot be enucleated entire, the author considers that in median perineal prostatectomy we have an excellent method of effecting a cure.

The Separation of the Urine of Each Kidney.—The desire for more accurate knowledge of the condition and secreting power of each kidney has in recent years stimulated the efforts of surgeons in the perfection of the technic of genito-urinary surgery, particularly cystoscopy, urinary segregation, and ureteral catheterization. H. W. T. WALKER (*Practitioner*, June, 1905) presents the subject very thoroughly. In renal disease there are two problems confronting the surgeon, (1) which kidney is diseased? and having decided this, (2) what is the functional power of the healthy or less diseased kidney? The first question is readily decided by the physical signs in most cases, yet the source of hematuria or pyuria requires the separation of the urine secreted by each kidney. The question as to whether the second kidney is sufficiently healthy to undertake the entire renal function, or, indeed, does a second kidney exist, must be decided. In the settlement of this question there are two methods at our disposal: Separation of the bladder into two halves by a septum and draining each half, and catheterization of the ureters. The methods at present in use for collecting the urine of each kidney separately are two. In one the bladder is artifically divided into two compartments and the urine drained separately from each kidney. The instruments which represent the most perfect mechanism are those of Luys and Cathelin. The second method is by means of a catheter cystoscope, by which the urine from each kidney is collected directly from the ureters without the intervention of the bladder. The instruments of Nitze, Casper and Albarran are the ones giving the best satisfaction. The following types of cases are given by the author as suitable for the use of these instruments: (1) Cases in which an operation is proposed on one diseased kidney, and information is desired in regard to the function of the second kidney; (2) cases in which hematuria or pyuria of known renal origin is present, but it is uncertain which is the diseased side.

The Causes of Appendicitis.—In considering the causes of appendicitis, F. C. BOTTOMLEY (*Practitioner*, June, 1905) treats of the etiology under three heads: (1) The variety of micro-organisms found in the disease; (2) why this part of the bowel is more liable to inflammation than other parts, and (3) the individual predisposing conditions. Under the first class the organism most frequently found to be present is the *Bacillus coli communis*. The streptococcus is a frequent cause. The following organisms have also, though less often, been found: The *Staphylococcus pyogenes aureus* and *Staphylococcus citreus*, pneumococcus, the *Bacillus pyocyaneus, proteus* and various anerobic and putrefactive bacilli, as have also the bacilli of influenza, diphtheria, glanders and tetanus. Actinomycosis is a rare cause. Tuberculous and typhoid ulcers may occur in the appendix. The conditions which make the appendix more liable to attack by micro-organisms than the rest of the bowel are: (1) Its great amount of lymphoid tissue; (2) the bacterial activity is at its maximum in the cecum; (3) its previous diseased condition; (4) gross lesions which are contributing causes, as concretions, ulcers, narrowing of the lumen at one point, true foreign bodies; (5) the appendix may be kinked, bent at an angle or twisted around its long axis, it may have a very short mesentery. Under the individual predisposing conditions may be mentioned: (1) Constipation; (2) the use of purgatives; (3) indigestion; (4) bad teeth, and (5) the uric acid diathesis.

Surgical Importance of the Cervical Rib.—While the supernumerary ribs of the lumbar vertebræ have only an academic interest, those of the cervical region, as CARL BECK (*Journal A. M. A.*, June 17) points out, have a real practical importance. The observations of disturbances due to a cervical rib are multiplying every year. The anomaly may vary from a slight growth just extending beyond the transverse process to a complete rib with a cartilage uniting with that of the first rib. It is bilateral in two-thirds of the cases, but a complete rib on both sides is a rarity. When not complete, or nearly so, it may give rise to no special symptoms, and before the use of the Roentgen ray it was comparatively seldom diagnosed during life, and most of the reported cases were, therefore, accidentally discovered at autopsy. Even when it caused trouble, the symptoms were often credited to tumor or other causes than cervical rib. It is probably, therefore, a more common anomaly than might

appear from the small number of cases reported. Though of congenital origin, it does not cause trouble until about the twentieth year, a fact that is hard to explain. The principal symptoms of the anomaly are a hump-like prominence in the lateral cervical region, a superficial pulsation of the subclavian artery and the appearance of pressure symptoms in the brachial plexus. The trouble is a mechanical one, and the treatment, when required, must be surgical. It is just as foolish, Beck remarks, to remove a cervical rib which causes no disturbance as it is to leave one that does cause disturbance until lasting tissue changes have been brought about. At times the technic is very simple, but in the majority of cases difficulties are met, and it should be done only by an experienced surgeon. The difficulty is enhanced by the necessity of removing the periosteum, as otherwise recurrence may be expected. Beck finds that a triangular flap incision, running directly downward along the trapezius and then conducted toward the sternum about one inch above the clavicle, fully exposes the field of operation. If the trapezius cannot be sufficiently retracted with a broad retractor, a transverse incision must be made into the muscle, for, next to a strict asepsis, the success of the operation depends on extensive exposure of its field. The brachial plexus, which usually runs across the rib, can be pushed aside: the subclavian artery is best pulled forward. The scaleni are done by using a Cooper shears and, advancing layer by layer, lifting the several muscle fibers with the flat of the scissors and using the instrument like a grooved director. By means of a ring-shaped periosteotome the rib is then freed of any small muscular appendages. The division is easy with Beck's beak-shaped rib shears, but some may prefer the Gigli saw. Any remains are nipped off with rongeur forceps.

On Echinococcus Cyst in the Thyroid.—This is one of the rarest tumors associated with this gland, and only 22 cases are thus far known. A case of particular interest on account of its retrosternal position in the anterior mediastinum and the difficulties attending its removal, is reported by O. EHRHARDT (*Berl. klin. Woch.*, April 17, 1905). The patient was a man aged twenty-one years, who reported that about three years previously he began to notice a growth which gradually appeared and grew up from behind the sternum. This was followed by severe dyspnea, difficulty in swallowing the cardiac palpitation. An operation was necessary for the relief of symptoms and was done under Schleich anesthesia. The tumor was quite large and involved a number of neck muscles. It was found necessary to exacuate it and then the true nature of the growth was revealed. Extirpation was completed with difficulty, the trachea being involved and some of the cartilagenous rings partially destroyed. As soon as the removal of the tumor was accomplished, relief from symptoms was immediate. The wound was sutured and the man made a good recovery. Some two years later, no recurrence had taken place.

Gastric Disturbances in Appendicitis.—It is to the credit of E. PEYR (*Münch. med. Woch.*, April 25, 1905) to have shown that many of the gastric disturbances seen with appendicitis are caused by embolic processes resulting from thrombi in the vessels of the mesentery or the omentum. If an emulsion of oil or paraffin be injected into the mesenteric veins of animals, it is almost always possible to bring about the formation of characteristic ulcers in the mucous membrane of the stomach with hemorrhage. In man the source of the thrombi is either the omentum or the appendix, with its mesenteriolum and the thrombi are caused by the infection itself or by the handling of the abdominal contents during the operation. Ulceration may also occur in the duodenum or other parts of the intestinal tract, though this is certainly very rare. Embolic processes are somewhat more common in the lungs and the portal system.

PHYSIOLOGY.

The Toxicity of the Urinary Alkalodis.—It has been shown by H. GUILLEMARD and P. VRAUCEANO (*Comptes Rendus*, May 8, 1905), that silicotungstic acid may serve to separate from the urine a number of bodies which show most of the reactions for alkaloids. The authors sought to discover the proportion which the alkaloidal toxicity bears to the total toxicity of the urine. They find that it is 18 to 25 per cent. Kreatinine has no influence on the alkaloidal toxicity, which does not vary in the same sense as the total toxicity, and is not proportional to the quantity of alkaloids, but depends on the nature of these substances.

The Production of Alcohol and Acetone by the Muscles.—An explanation of a possible source of some of the acetone that may accumulate in the blood in pathological conditions, is afforded by the research of F. MAIGNAN (*Comptes Rendus*, April 17, 1905), who finds that a muscle removed from an animal and placed under conditions favorable for survival, produces both acetone and alcohol. The former constantly increases, but the latter increases only for the first few days, and then diminishes. The tissues are able to destroy alcohol after it is formed, but have no influence over the molecule of acetone. The alcohol is probably transformed into acetic acid by a direct or an indirect oxidation. The acetic acid then undergoes the fate of all other organic acids in the body, namely, a transformation by odixation, into carbon dioxide and water. The transformation of glucose into alcohol may be considered a mode by which the body is able to destroy glucose.

A New Method of Testing for Formalin in Milk.—The altogether too common use of formalin by milk-dealers gives importance to the communication of E. NICOLAS (*Comptes Rendus*, April 17, 1905) on a new method of discovering this toxic substance in milk. This test consists in the precipitation of the casein by means of acetic acid (up to 10 per cent.), filtration, and then adding to the filtrate some crystals of amidol, or amidophenol. In the presence of minute quantities of formalin (1-50,000) there occurs a canary-yellow coloration.

The Biligenic Function of the Spleen.—It has for a long time been thought that some intimate relationship exists between the spleen and the liver. An investigation of this problem was made by MM. CHARRIN and MOUSSU (*Comptes Rendus*, April 17, 1905). In animals subjected to cholecystotomy with the formation of a biliary fistula, it was found that a subsequent splenectomy caused a change in the quality of the bile. This gradually suffered a loss in color, and a diminution in its specific elements. The conclusion is drawn that the spleen, by virtue of its hemolytic function, provided the coloring matter, salts, and other substances which enter into composition of the bile by the liver.

Glycemia due to Ablation of the Mammary Glands.—The removal of the mammary glands in an animal about to give birth to young causes, according to M. PORCHER (*Comptes Rendus*, May 8, 1905), the appearance of a large quantity of sugar in the blood with a resulting glycosuria. This is easily explained by the fact that the sugar which ordinarily would go to the mammary glands, to be converted into lactose, is thrown back upon the blood, and finally secreted by the urine.

The Reduction of Oxyhemoglobin.—A new method that may be of value in clinical diagnosis, and which

consists in a measurement of the time taken to reduce the oxyhemoglobin in a specimen of blood, has been discovered by R. LÉPINE and BOULIED (*Comptes Rendus*, April 10, 1905). Jabonley reported in 1904 a case of surgical shock following a prolonged anesthesia, in which the time for the reduction of hemoglobin removed from the patient was delayed. With this as a hint the authors sought to determine whether this delay occurs in any other conditions. Samples of blood in which the amount of hemoglobin was carefully determined were then subjected to the reducing action of certain agents, and the time that it took before the absorption-bands for oxyhemoglobin to disappear was noted. The reduction-time of the oxyhemoglobin of the blood of a normal dog is generally between eighteen and twenty minutes. Dilution of the blood has no effect on the reduction-time. In anemia the reduction-time is greatly increased. The prolonged inhalation of ether or chloroform has the same effect. Microbic infection, even with a very virulent staphylococcus, with a strong febrile reaction, has no effect on the reduction-time. In normal venous blood this time is usually three minutes less than that of arterial blood.

Action of Intestinal Juice upon the Secretory Activity of the Small Intestine.—By injecting intestinal juice into the blood of an animal it was found by A. FROUIN (*Comptes Rendus*, April 17, 1905), that the amount of intestinal juice secreted was markedly increased. It was also found that the substance in the intestinal juice which stimulates this increased production is not a ferment, since it is not precipitated by diluted alcohol and is not destroyed by heat. Hence it cannot be secretin.

Philocatalase and Anticatalase in Animal Tissues.—The discovery of anti-ferments and anti-anti-ferments in the blood has been established on sound experimental foundations. T. BAGGELLI and Mlle. L. STERN (*Comptes Rendus*, May 1, 1905) have given the name anticatalase to a ferment capable of destroying catalase in the presence of oxygen. Anticatalase is found in the spleen, liver, and lung. Moreover, in several tissues as well as in the blood there is a ferment which has the power of destroying anticatalase, thus protecting catalase. To this ferment the authors give the name philocatalase, and they find it present in the organs in which the anticatalase is also present, and in the same proportion as the latter.

Variations of Osmotic Pressure in the Contracting Muscle.—Attempts have been made to explain the muscular contraction on the basis of surface tension. S. LEDUC (*Comptes Rendus*, May 1, 1905) finds that the contracting muscle causes an elevation in the osmotic pressure in the muscle. This increases with the increased strength and duration of the contractions, and with the increase in work performed by the muscle. These changes cannot fail to have a profound, if not a unique, influence on fatigue.

The Favorable Effect of X-rays in Non-Suppurative Tuberculous Adenopathies.—A report of three cases, showing the favorable effects of the X-rays in swollen glands of the neck was made by J. BERGONIÉ (*Comptes Rendus*, March 27, 1905). The cases presented a chain of swollen indurated glands fixed to the deeper tissues, which had resisted all other forms of treatment. A number of exposures to the X-rays caused a disintegration of and diminution in size of the glands, which, however, did not entirely disappear. That the improvement was really due to the X-rays was shown by the fact that some of the glands which were shielded from the rays remained unchanged. Further experiments are promised by the author.

Treatment of Cerebrospinal Meningitis with Pilocarpine.—A large number of cases of cerebrospinal meningitis have been treated successfully with pilocarpine by V. VORYZEK (*Wien. klin. therap. Woch.*, May 21, 1905), after all other remedies had been tried and the condition seemed hopeless. The drug was always given by mouth in daily doses of 5 to 7 centigrams for adults and 2 to 5 centigrams for children. It was always borne well, since bad after-effects are only common after hypodermic injections. The action of the drug is probably the same as in pneumonia; a leucocytosis is set up, which enables the body to successfully combat the invading germs.

OBSTETRICS AND GYNECOLOGY.

The Metritis of Virgins.—It has been a subject for dispute among gynecologists whether the virgin uterus is ever subject to a true metritis. P. DALCHÉ (*Arch. de Therap.*, April 15, 1905) takes an affirmative view and states the following as causes of metritis in the unmarried. First of all is gonorrhea, which is frequently contracted innocently by young girls. Other causes are poor hygiene during the early menstrual life, a narrow introitus vaginæ, causing retention of menstrual fluid and congenital maldevelopment of the uterus. The symptoms of vaginal metritis are dismenorrhea, menorrhagia, pains in the hypogastrium, and leucorrhea. The treatment is the following: The application of a number of leeches to the hypogastrium, in order to reduce the pelvic congestion, the wearing night and day of hot fomentations over the hypogastrium, the administration of mild laxatives (it may be mentioned that a number of cases of false metritis are the result of pelvic congestion due to constipation, and the use of sedative sitz-baths containing leaves of nightshade, belladonna, hyoscyamus, each 30 grains; also add to the water two crushed poppy-heads. In addition to this the patient should get vaginal injections. For this purpose, use injections of the following:

℞ Eucalyptus leaves 10
Aquæ 1000

Filter and add one soupspoonful of bicarbonate of soda.

The Effects of Sexual Incontinence During Gestation.—There are a number of grounds for the belief that sexual intercourse should be avoided by the pregnant woman. Ch. FÉRÉ (*Arch. de Neurologie*, April, 1905) believes that, besides the greater liability to abortion which may result from this practice, injurious consequences to the unborn infant may result. He cites the case of a young child exhibiting many of the traits of degeneration, the offspring of healthy parents, with a history of excessive intercourse during the pregnancy of the mother. He believes that this practice harmed the fetus during its early intra-uterine life. The author believes that during early pregnancy, owing to the release from the fear of additional offspring, the amount of sexual intercourse indulged in may be excessive. This was the case in the instance cited. The possible injurious effects on the future of the offspring should decide in favor of the rule that during gestation coitus should be interdicted entirely.

Technic of Ventrosuspension.—The object of the operation of ventrosuspension is to secure the uterus to the anterior abdominal parietes forward in an exaggerated normal position, so that subsequently a ligament is formed or pulled out to maintain the uterus in its normal position. Such a ligament must not involve a wide area of uterine parenchyma, and should be of such a character as to undergo hypertrophy and hyper-

plasia during the growth of a pregnant uterus. In view of the occasional failure of the Keely operation, H. D. BEYEA (*Am. Jour. Obstet.*, April, 1905) suggests a modification which has proved successful in over four hundred cases. The silk suspension sutures are passed from without through rectus muscle, one-quarter of an inch from the margin, through peritoneum and uterine tissue and out through peritoneum and muscle on the opposite side. Two such sutures are introduced, one-quarter of an inch apart, and tied with just sufficient tension to bring the uterus firmly in contact with the peritoneum without cutting through muscle tissue. The ligamentary support formed through this operation is always single and is believed to contain muscle fibres from both uterus and rectus, an advantage in its hypertrophy during gestation and in its contractile power during the puerperium.

Results of Ventral Suspension of the Uterus.—G. R. HOLDEN (*Am. Jour. Obstet.*, April, 1905) has made a study of the postoperation history of 445 cases in which the operation of ventral suspension had been performed at the Johns Hopkins Hospital, which led to the following conclusions: (1) Successful symptomatic results after suspension of the uterus may be expected in about 60 per cent. of those cases in which the retroposition is the sole or most prominent abnormal condition. (2) Fifty per cent. to 60 per cent. of all cases of dysmenorrhea in which retroposition is the most prominent abnormal condition, are relieved of the dysmenorrhea by suspension of the uterus. (3) The suspension ligament is usually a band or one or two cords, 3 to 5 cm. long. (4) The majority of patients who have had the operation performed have no adverse symptoms referable to the suspension during pregnancy or labor. The most frequent adverse symptom is abdominal pain during pregnancy. (5) Recurrence does not necessarily follow after labor, but may occur. If labor does not intervene the number of recurrences is not more than five per cent.

Varicose Veins of the Broad Ligament.—The presence of varicose veins in the broad ligament constitutes a condition worthy of recognition as a clinical and pathological entity. Most gynecologists pass them over with the assumption that they are secondary and will disappear with the correction of the causative lesion. They may be overlooked because they do not manifest themselves when the patient is prone or in the Trendelenburg position. The veins of the broad ligament lie in two groups under the ovary and low down in the ligament near the internal os. The anatomical peculiarities that predispose the spermatic veins to varicocele in the male are alike present in case of the ovarian veins. The monthly engorgement of the uterus and the vascular distention demanded by the pregnant uterus are etiologic factors not found in the male. After a study of those cases in which there is no complicating conditions to which the symptoms might be attributed, S. M. MILLER and A. B. KANAVEL (*Am. Jour. Obstet.*, April, 1905) consider the subjective symptoms of varicose veins in the broad ligament to be a disturbance of menstruation, which is apt to be prolonged, profuse and frequent and a sense of fulness, weight and tension in the pelvis, increased on standing and relieved on assuming a reclining position. In secondary cases the symptoms are inseparable from those of the causative conditions. The physical examination should be made with the patient standing and the broad ligament palpated through the rectum and the vagina. The varicose veins are felt as a baggy mass, a subinvoluted uterus is usually present, hemorrhoids, varicosities of the vulva and a bluish tint to the mucous membrane of the vagina may be noted. The disease is clinically curable, the treatment consisting in ligation and excision or section of the veins, with such treatment of the ovaries, tubes and uterus as may be indicated.

PRESCRIPTION HINTS.

Treatment of Erysipelas.—W. F. WAUGH (*Med. Standard*, June, 1905) recommends in the treatment of erysipelas the use of pilocarpine in sthenic cases, and iron in asthenic cases. During a period of twenty-five years he has had good results with this line of treatment, and no deaths. No local treatment is recommended. In sthenic cases the pilocarpine is given every hour until sweating occurs. When this takes place the edges of the involved area begin to recede. This remedy is then suspended for a day, and if the eruption continues the treatment is resumed until it is evident that the remedy has perfect control of the disease. In asthenic cases the tincture of the chloride of iron, thirty drops every four hours, and nourishment crowded, when improvement sets in at once.

Lotion for the Treatment of Eczema.—

℞ Potassii chloratis.....1 gr. 50
Vini opii.....2 gr. 50
Aq. dist.....1,000 gr.

M. Dissolve. Saturate compresses with this solution and apply them upon the parts affected by the eczema. If the inflammation is very acute, begin the treatment by a warm bath of the affected parts and the use of poultices made of powdered carbonate of lime.—*Journal de Medecine de Paris.*

Antihemorrhoidal Ointment (WEST).—

℞ Extract of henbane, Tannin, aa 5 gr.
Petrolatum .....90 gr.

—*Journal de Medecine de Paris.*

Treatment of Corns (BROCQ).—Soften the corn at night by covering it with a piece of flannel coated with soap and some spirits of wine. Afterward scrape it with a curette or a knife. Apply on eight successive days a layer of the following collodion:

℞ Alcoholic extract of cannabis indica...0. gr. 5
Salicylic acid, Alcohol (90%), aa 1 gr.
Ether .....2 gr. 50
Flexible collodion.....5 gr.

M. F. s. a.

On the eighth day, after bathing the foot for a long time in hot water, scrape away with a curette or knife the mass of collodion, and along with it the greater part or all of the corn. If necessary, the treatment may be repeated.

A common and often efficient remedy is to place upon the corn a round piece of lemon during one or several succeeding nights.

Cantharideal collodion, or salicylic ointment is also used. Different caustics should be used with extreme caution. Surround the very painful corns with a special ring of wool or a corn plaster. When the corn is situated between the toes, keep the latter separated with a pad of fine cloth, and dust the corn with a powder of tannin, alum or oxide of zinc. Certain authors recommend the following method: (1) Moisten the corn with a concentrated solution of salicylic acid in alcohol; (2) cover with powdered salicylic acid and make a sealed covering with a small piece of cotton wadding; (3) renew the dressing in four or five days, and if there is any inflammation, stop the treatment. About the eighth day remove the corn by soaking.

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THE HYPERTROPHIC REACTION.

It requires scarcely more than a superficial survey of recent investigations in the domain of pathology, to note that the laws underlying morbid processes are no different from those that govern biological phenomena in general. The discovery made by Virchow over fifty years ago, that the normal body cell is the anatomical unit of all pathological formations, may now be supplemented by the revelation of equal importance, namely, that the mechanisms of both physiological and pathological processes are identical.

One of the most comprehensive of all biological principles is that of adaptation. Upon this conception has been erected the grand superstructure of organic evolution. The experimental investigation of the ways in which various organisms react to changes in its environment has already yielded substantial results.

While de Vries and his followers will continue to till this fertile field of research among the lower forms of animal life, the pathologist and clinician, as well as the physiologist, will no less be able to note the applications of this basic principle in the highest of all organisms.

It is hardly necessary to allude to all of the numerous examples of adaptation in the normal body. Without dwelling on the various forms of compensatory hypertrophy, which have been recognized for a long time, one may recall one of the recent brilliant researches on the digestive ferments. Thus it has been shown that the pancreas is capable of adapting itself to a change in diet by changing the character of its secretion. To be more explicit, if dogs be fed on milk-sugar, their pancreatic juice will soon be found to contain lactase, although this ferment is under other circumstances not found in this secretion.

About a year ago, in an article entitled "The Biological Interpretation of Cancer," in the Medical News, Dr. A. Spingarn placed malignant neoplasms in the same category with the various forms of physiological hypertrophy. To quote this article, "the explanation of these forms of hypertrophy may be sought in the fact that when the cells of a tissue are incapable, as the result of some irritation, be it chemical, parasitic, or mechanical, of doing the work allotted to them, then these cells will proliferate in order to produce other cells, the activity of which will make up for the embarrassed function." According to this view, the secret of all forms of hyperplasia, both physiological and pathological, is to be found in some form of interference with normal activity.

Among the various forms of tissue overgrowth, there is none of such universal occurrence, appearing in almost every individual who has passed middle life, none which is nearly as much responsible for chronic disease, and none which has so stoutly resisted all therapeutic efforts, as the connective-tissue hyperplasias. If the cause of these could be clearly revealed, then the mystery of Bright's disease, emphysema, myocarditis, etc., will have been solved.

In the light of what has already been suggested as to the adaptive reactions of the organism, one may attribute the connective-tissue hyperplasias to some form of antecedent irritation. This view is certainly in harmony with the results of clinical observation. Thus, among the etiological factors of Bright's disease, are to be mentioned alcohol, lead poisoning and gout, which are also responsible for other diseases due to connective-tissue proliferation. That these diseases are fundamentally of toxic origin has suggested important possibilities from the viewpoint of preventive medicine. Indeed, Metchnikoff has gone so far as to attribute the sclerotic changes of senility to toxins absorbed from the alimentary canal.

At the recent meeting of the Association of

American Physicians at Washington were read two important papers bearing directly upon this subject. One of these was by Dr. A. O. J. Kelly, of Philadelphia, and dealt with the pathology of cirrhosis of the liver. This author pointed out that while it is the custom to think of the overgrowth of connective-tissue as the cause of the fibrosis, the study of the parenchyma has been neglected. In the course of the destructive process, there is an overgrowth of liver-cells. The beginning of cirrhosis is attributed to some cell poison which produces necrosis of liver-cells at a time when the liver is capable of making up for its loss by hyperplastic reaction. The essential feature in cirrhosis of the liver, instead of being atrophy, as is commonly thought, is really, in the majority of cases, a hypertrophy, even in the advanced stages of the disease.

Dr. Richard M. Pearce, of Albany, N. Y., was the author of the other paper, which dealt with the experimental aspect of this subject. It was Kretz who first advanced the theory that cirrhosis of the liver is the expression of the conservative process of repair by which nature seeks to mend the damage inflicted upon the liver parenchyma. Pearce experimented on dogs, with the view of producing necrotic changes in the liver. For this purpose he injected hemolytic immune sera of high hemagglutinative power. These produced thrombi composed of fused red blood-corpuscles. The resisting obstruction of the circulation produced necrotic foci in the liver. The process of repair following these lesions was minutely studied. There first occurs a mitosis of the liver cells lying at a slight distance from the necrotic areas, occurring thirty-eight hours after injection. At the end of forty-eight hours there is a proliferation of endothelial and connective-tissue cells, which increases so rapidly that in five days the necrotic tissue is almost entirely replaced by young granulation tissues. The only difference between this artificial cirrhosis and that seen in man, is that the cirrhotic process does not occur at the periphery of the lobule as in man, but near its center. This slight topographical difference, however, does not affect the important biological significance of these experiments.

These researches afford another illustration of the latent reparative energies of the body, of which the closing in and final obliteration of a tuberculous cavity in the lung is a familiar example. While in most instances this new connective-tissue formation is a purely conservative process, in some instances it may overstep the strict limits of repair, and may become, in itself, a pathological menace.

The hypertrophic reaction must, therefore, be regarded as identical with the capacity of regeneration normally possessed by all living tissues. Two types of regeneration may be distinguished, namely, the normal and the abnormal. In the former the process of repair proceeds at a rate and to a limit just sufficient to restore the part or function that has been lost or damaged. In the latter, the persistence of some irritant causes an extravagant prolongation of the regenerative forces. As an example of the normal type, the formation of ordinary scar-tissue may be cited, while the formation of exuberant granulations and of keloid serves as an example of the abnormal type of regeneration. It is to the latter that the various pathological hyperplasias belong.

This entire subject has little to offer from the viewpoint of active therapeutics, but from that of preventive medicine it is pregnant with possibilities. The rôle of various irritants and other destructive agents in the production of the various hypertrophies and hyperplasias has been clearly indicated. A truth which the physician is best fitted to circulate abroad is, that the "simple life" has a physical as well as a spiritual connotation.

THE PHYSIOLOGY AND THERAPEUTICS OF THE MEDULLARY SUBSTANCE OF THE SUPRARENALS.

ANATOMICALLY two distinct portions of the suprarenals have been recognized—the cortex and medulla. The latter has been termed the paraganglionic portion, since in certain particulars it resembles in structure the sympathetic ganglia, from which, indeed, it has been derived. The utter disparity between the cortex and the medulla both histologically and genetically suggests that these portions have distinct functions in the animal economy. The unique place which the adrenals have won in modern therapeutics has been achieved in spite of a disregard of these two diverse portions of the organ, since the suprarenal extracts that are being so largely used are obtained from the entire organ.

It has remained for certain Italian investigators to probe into the physiology of the medullary portion and to discover its peculiar therapeutic virtues. In February, 1903, Professor G. Vassale and Dr. A. Zanfrognini reported to the Medico-Chirurgical Society of Modena the effects of ablation of the medullary substance of the adrenals. This is followed in cats by acute symptoms and death, from which the authors concluded that the medulla, which is the more important part of the chromaffin tissue, has the function of secreting, like the rest of this tissue, a substance which is necessary to the economy. It preserves the cardiovascular tone, acting directly upon the smooth-muscle fibers, exciting their contraction and maintaining their tone. It also bears some relation to the bodily metabolism, acting like a ferment in regulating the biochemical exchanges and preventing auto-intoxication.

In June of the same year, Vassale reported that the ingestion of an extract of the medullary portion of the adrenals has an action which is five times as energetic as that of the adrenalin of commerce. He found that it had a particularly favorable effect upon the muscle of the gastro-intestinal canal. It caused a surprising improvement both in the local and general condition of individuals suffering from atonic gastrectasia and peristaltic atony, associated with neurasthenic symptoms; these were cases of several years' duration. This observer also found that the active principle of the adrenals is not affected in vitro by the gastric juice, and when administered by the mouth it passes into the blood vessels of the stomach unaltered, preserving its characteristic action. He therefore considered that this method of administration is rational and is indicated in the various forms of gastric and intestinal atony, in the different neuroses, and in spinal and mental diseases in which are found as marked symptoms, cardiovascular and atonic gastro-intestinal troubles with marked general asthenia. This investigator proposed to replace the names adrenalin and suprarenin with the term "paragangline," which designates more precisely the secretion of the medullary portion of the suprarenals.

Vassale was not the only one to observe the peculiar medicinal virtues of this portion of the adrenals. U. Baccarini and A. Plessi reported their results in the treatment of fourteen cases of gastric atony by means of daily doses of from forty to sixty drops of the medullary extract, in divided doses four to eight times a day. The effect of the drug does not last long, hence the necessity of frequent dosage. The results were rapid and brilliant and persisted after the cessation of the treatment. The gastric symptoms were relieved through an augmented mobility of the stomach. As accessory effects, the authors observed an increase in the pulse-rate and of the cardiovascular pressure, an augmentation in the amount of urine, of ureic nitrogen and of phosphoric acid excreted, which indicates an acceleration of the oxidative processes of the organism.

Another clinician, G. Guiciardi, reports similar results (*Rivista Sperim. di Freniatria*, Fasc. 1, 1903). He employed the paragangline (Vassale) in various neuropathic conditions with or without gastro-intestinal symptoms, and in cases of scrofulous glandular enlargements. The action upon the stomach and intestine was always prompt and efficacious. In general asthenia there is always an increase in the amount of energy put forth and in the sense of well-being. The metabolism is notably increased in cases of senile epilepsy with arteriosclerosis and in old and torpid glandular enlargements. No intolerance to the drug was observed.

The above unanimous verdict as to the usefulness of paragangline in conditions which are not very uncommon, arouses the hope that clinicians in this country will give this drug a trial, and that manufacturers will soon place this at our disposal.

TO FILTER CROTON WATER.

DR. DARLINGTON, the Commissioner of Health, recently made a report to the Mayor in which he strongly expresses his conviction that filtration is necessary in order to protect the people of New York against the invasion of disease germs. The reasons set forth include the arguments which have long been familiar to the student of public hygiene, although some of them have, in this instance, been drawn out to a somewhat unusual tenuity: the impurities of the water are increasing, and are likely to increase still more in the future; there is an increasing difficulty in the way of properly protecting the water-sheds against pollution; the authority and laws governing the means by which the sanitary condition of the supply can be protected are imperfect; the death rates from typhoid fever and diarrheal diseases are unnecessarily high; filtration is an economical process when its cost is compared with the value

of the lives saved. It is usually possible in such arguments to point to a high typhoid fever death rate as a reason for filtration, but in New York this is fortunately impossible: New York has one of the lowest death rates from typhoid of any of the large cities of America, and a considerable part of it is believed to be due to the consumption of polluted shellfish.

The cost of a plant for filtering the Croton water has been estimated at $17,000,000; the cost of operating it, including repairs and depreciation, at a sum which, if capitalized, would be $900,000. It is said that the work would be completed in two years.

The report of Dr. Darlington, dated July 25, 1905, is not the first move in the project for a filtration plant for the Croton. This project was started by the Commission of an Additional Water Supply, who recommended that "work be immediately begun for the filtration of the Croton supply." It is understood that the Aqueduct Commission would have undertaken to carry out this recommendation, but were blocked by the fact that the Corporation Counsel expressed the opinion that the Commission did not have the necessary legal power to do so. The New York Water Board apparently has no more power in this respect than the Aqueduct Commission, and although it undoubtedly would be in favor of the plan, it cannot be expected to carry it out at present unless the Board of Aldermen move on the Health Commissioners' report or a recommendation is made by the Mayor.

Meanwhile there need be no alarm. Opinions cannot differ as to the ultimate need of filtration plants to purify the Croton, but analyses and statistics show that the water is not unwholesome now. If the Central Park reservoirs were kept properly cleaned and the works and drainage areas maintained in a proper manner there would be no fault to find with the supply at present. The filtration of the Croton is a large project. In view of the uphill work usually necessary before purification works would be built in any city, the agitation for a filtration plant in New York has been begun none too soon.

Typhoid Fever at Bay Ridge.—Bitter complaint is made by the residents of Bay Ridge, following the spread of typhoid fever to that section, the neighborhood of Fort Hamilton and South Brooklyn, because they have recently been deprived of water from the artesian wells at Utrecht and Gravesend. This perfectly pure water supply, they say, has been diverted to Coney Island and they have been furnished instead with water from the Ridgewood Reservoir.

ECHOES AND NEWS.

NEW YORK.

Epidemic Cerebrospinal Meningitis.—The situation in New York is weekly improving, only 24 new cases for the week ending August 5, 1905, having been reported. The number of cases of typhoid fever is slowly rising at this time, 122 cases having been reported during the same week.

Phthisiophobia in Middletown.—Vigorous opposition has developed to the establishing of a sanitarium for tuberculosis patients on the top of Shawangunk Mountain, at Otisville, by the Board of Health of New York City. The opposition is led by the Erie Railroad and its army of commuters living near New York City. E. H. Barto, suburban passenger agent of the Erie, was in Middletown last week and has been working hard to get the Orange County Board of Supervisors to rescind its action granting permission for the sanitarium. Both the county and town authorities have been given permission and New York City has commenced laying out the grounds.

Washington Heights Hospital Appeal.—This hospital, a new charitable institution at One Hundred and Seventy-fourth Street and Broadway, was opened to the public on August 1. The hospital is in immediate need of an ambulance service to cover the large area in which the population of Washington Heights is contained, and the authorities take the liberty to solicit voluntary subscriptions to provide an ambulance outfit as quickly as possible. Washington Heights is already one of the most populous sections of the city, and in five years will have over half a million people above One Hundred and Forty-fifth Street. The only hospital in the vicinity at present is at One Hundred and Thirty-first Street and Amsterdam Avenue, two miles from the center of the new heights district.

New York State Tuberculosis Hospital.—The retirement of Dr. Pryor from the superintendency of the New York State Hospital for the Treatment of Incipient Pulmonary Tuberculosis at Ray Brook, continues to excite interest and comment throughout the State. Those who are familiar with the facts, writes *Charities*, believe that the troubles at Ray Brook have been aggravated by the failures to provide a business head for that institution in the form of a competent steward. This failure imposed upon the medical superintendent of the institution work which should never have been placed upon him, and the result was, under those circumstances, a foregone conclusion. It is well known, says *Charities*, that for some reasons of his own that have not yet been fully developed, the fiscal supervisor of State Charities has been seeking to get rid of the stewards at some of the institutions, with the result of throwing a large amount of extra work on the superintendents. This experiment was tried at the House of Refuge for Women at Hudson, with bad results, and, finally, after the superintendent had been obliged to take a lengthy vacation to recover from the extra strain upon her, a steward was again employed. Through the influence of the fiscal supervisor, the board of managers of the Ray Brook hospital were obliged to do without a steward and to satisfy themselves as best they could with the services of a "bookkeeper, storekeeper and purchasing clerk."

The Loeb Memorial Home.—Plans have been completed for the Solomon and Betty Loeb Con-

valescent Home, to be established by the children of those in whose memory it is named at East View, Westchester County. The site is the former Harris farm, an estate of more than seventy acres, situated on an elevation, with a commanding view. In addition to the land, the sum of $750,000 has been given for the institution, of which $500,000 has been set aside as a permanent income-producing fund, while the remainder is to be used at the discretion of the trustees for the erection and equipment of the home. As stated in the *Evening Post* last April, the purpose of the foundation is to provide an opportunity for the enjoyment of wholesome surroundings in the country to recent sufferers from acute diseases, so that they may sufficiently recover their strength and health before again entering their vocations. Besides actual convalescents, it is intended to receive persons who are in poor physical condition from anemia or similar troubles; but no attempt is to be made to cure either acute of chronic diseases. A mansion now on the site of the home is to be removed entirely, as it did not prove to be adaptable for the purposes of the institution, and the new administration building is to take its place, situated between beautiful groves of old pines and other fine trees on the crest of the hill. Distributed about this, at distances of from 200 to 300 feet, will be three cottages, one for men, one for women, and one for children. These cottages will be as homelike as possible, and every effort will be made to exclude the impression of a hospital. The main or administration building is to have large foyers and extensive porches. On the main floor will be a music room, large and small dining rooms, and pantries, while in the basement will be a smoking and billiard room, servants' dining rooms, the kitchen, and provision rooms. The second story will contain the apartments of the superintendent and the matron, an emergency hospital, storerooms, toilet rooms, etc., and a number of rooms for the reception of about ten convalescents before they are assigned to the detached cottages. In the cottage for children will be two separated dormitories for twelve persons each, with large dining rooms, playrooms, a reading room, and a sun parlor on the ground floor. Each of the two other cottages is to contain thirteen bedrooms for one or not more than two occupants each, with one living room, joint toilet, and bathrooms, and an apartment for the nurse. Large porches will be a feature of these structures. All the buildings on the grounds will be two and a half stories in height, and will have brick walls covered with plaster work, except that the outside of the children's cottage will be half in timber work. The architecture of the cottages is to be of old English style. A central plant will provide for the hot-water heating and supply all the buildings.

Yellow Fever in the Past in New York.—While residents of Manhattan Island during the last half-century, writes the *Evening Post*, have enjoyed almost complete immunity from yellow fever, only sixty-eight deaths having occurred since 1852, according to statistics on file in the Board of Health, the period previous thereto saw several epidemics which in many cases changed the entire complexion of sections of the city by the inhabitants leaving the infected districts and going to others. As early as 1706, in the days of Lord Cornbury, New York was visited by the fever, which was brought from St. Thomas. Every one who could fled either to New Jersey or Long Island, Lord Cornbury with his retinue, taking up his residence in Jamaica. It appeared slightly up to 1747, but in 1791, it again visited the city, and was confined to a limited region about Burling Slip. Early in the summer of 1795, in the midst of political commotions, a British frigate entered New York Harbor with several cases of yellow fever on board. The disease spread rapidly through the city, and continued to rage till the coming on of the cold weather. A large portion of the inhabitants fled from the city and nearly all forms of business experienced a complete stagnation. The whole number of deaths by the fever amounted to about seven hundred and fifty, or about 1½ per cent. of the whole population. In 1798 the epidemic returned again, and although it did not appear till near the beginning of August, it greatly exceeded in fatality that which had preceded it. More than two thousand persons died of it, or one-tenth of the population. An investigation into the cause of this epidemic made by "a large and respectable committee of the citizens, the physicians, and of the corporation," presented only the ordinary causes of disease in large cities. Among these they enumerated "deep, damp cellars, public slips containing filth and stagnant water, burials in the city, narrow and filthy streets, tippling houses (more than a thousand were licensed that year), and want of a supply of pure and wholsesome water." It appeared again yearly in modified degree until 1805, when it raged with considerable violence, producing great panic and flight from the city and seriously deranging business. Mrs. Lamb, in her "History of New York," describes the epidemic of 1798 in the following words: "Many were seized with it before they had heard of its presence. Nearly one-half of the cases reported in the month of August proved fatal. The horror of the situation was greatly increased by the alarm of the country people, who ceased bringing their country produce to market. The relief committee appealed through the newspapers for supplies of poultry and small meats, an appeal which met with a bounteous response. Business was suspended, and schools and churches closed. Washington Square, purchased for a burial place by the corporation in 1796, became a potter's field indeed, and not only strangers and common people, but many persons of note were buried within its limits." The visitation of the fever in 1803 stopped the work for a time on the building of the City Hall, and Mayor Livingston is said to have remained at his post, regarding himself bound, as by a sacred contract, to face the terrible enemy and alleviate suffering. Livingston was stricken with the disease, but recovered. Twelve years later New York was again the seat of this dreadful scourge, Hemstreet's "Story of Manhattan," describing it thus: "In the year 1815, after the battle of New Orleans, everything was going along smoothly when all at once the yellow fever broke out on the West Side, far down town. It raged with even more violence than had the smallpox. Citizens fled, and the stricken district was fenced off, so that no one might enter it. It was like a place of the dead, silent and deserted. Many people went far out of town to Greenwich Village, and many business houses opened offices in this little settlement, with the result that Greenwich Village started on a new life, and it was not long before it grew to be an important part of New York, instead of a suburb. For many who had transferred their business, also went to live there, not returning to the city even

after the fever had passed away." In July, 1819, the fever reappeared. A few fatal cases occurred in the neighborhood of Old Slip, but did not extend farther. But in 1822 it broke out suddenly in Rector Street, and soon extended through the vicinity and up to Broadway. The epidemical character of the disease was marked, and exceedingly malignant, and the contagion unusually active and violent. By the middle of August the epidemical atmosphere overspread all that part of the city that lies below the park, and the entire population of the infected district fled before it. The Custom House, banks, and other offices were closed and abandoned, or removed to temporary quarters in Greenwich Village. High board fences shut off each infected street or district below City Hall. Ferry boats landed their passengers far uptown. The markets were removed to Chatham Square and Hudson Street, near St. John's Park. Multitudes fled the city, and many dwellings were hastily constructed in the upper wards, especially at Greenwich Village. The disease lingered until autumn. The fever did not reappear until the year 1852, from which time up to last year the following deaths have occurred; 1852, 1; 1853, 5; 1854, 6; 1855, 2; 1856, 13; 1858, 5; 1895, 4; 1860, 2; 1864, 2; 1867, 3; 1868, 1; 1869, 1; 1870, 3; 1871, 2; 1873, 3; 1876, 1; 1877, 1; 1879, 2; 1880, 1; 1884, 3; 1885, 1; 1886, 1; 1888, 3, including the death from yellow fever of the Astronomer Proctor, who died in the Clarendon Hotel; 1892, 1; 1898, 1 (Colonel Waring was the only victim this year).

PHILADELPHIA.

Starvation as a Means of Escaping the Penalty of Murder.—In order to defeat the purpose of James Salerno, who set out to starve himself to escape the penalty which will fall to his lot for the murder of his stepdaughter, Sheriff Riddell, of Williamsport, subjected the convict to violent exercise, which induced him to take the food he had refused for five days.

Wound of the Heart Sutured.—While attempting to do voluntary police duty Alonzo J. Currington received a wound of the heart which almost proved fatal. The knife used by the patient's adversary punctured the left ventricle. After receiving the stab Currington walked 50 yards, caught the wagon which he protected and asked the driver to take him to the hospital to have the wound attended to. Dr. John Gibbon, of 332 South Fifteenth Street, Philadelphia, reached Bryn Mawr Hospital soon after the occurrence of the accident and placed five sutures in the heart muscle. Lying in the same ward is a boy who punctured the pericardium and tore the heart muscle slightly by falling upon a pitchfork. His wound was also sutured; both patients are getting well.

The Results as Revealed by the Investigation of the Schuylkill River.—Two years ago when the Reading sewage filter plants were examined by the State the bed was constructed with sand which is now substituted by grit, which permits the sewage to pass through rapidly but retains little or none of the solid substances. Each filter bed is cleaned once every twenty-four hours and the contents are dumped upon a large pile about 100 feet from the river so that with each heavy rain much of the filter materials are washed into the river. Along the banks of the river between Reading and Phœnixville the stream was found polluted by washings of stables and outhouses. French Creek, which is near Phœnixville, receives the discharges of slaughter houses and the water of the old canal into which the discharges of the gas works are thrown. Many of the street sewers in Norristown empty directly into the river and in Conshohocken all the surface water reaches the river. Farther down the stream the closets of the railway station and of the small villages drain into the river. The same pollution occurs at Manayunk. The canal of the last-named place is a source of great pollution on account of the class of people who inhabit its banks; they pay little respect to the laws of sanitation.

CHICAGO.

City Department of Health Adopts System of Food Inspection.—The city health department is sending inspectors to all market districts of the city, and kerosene is poured upon the condemned food to prevent its sale. The inspectors attacked the Ghetto, and 8,000 pounds of fish, 70 crates of bananas, 185 crates of pears, 620 crates of peaches, and 15 tainted calves were condemned in one day. Milk dealers will also be visited by the new "flying squadrons."

Music Treatment Aid to Insane at Dunning.—"Better than barrels of medicine and much more effective than straps or straight-jackets." In these words Dr. B. H. Podstata, general superintendent of the asylum for the insane at Dunning, summed up his opinion recently, after observing for two hours the effect of music upon an audience composed of insane men and women patients. The concert given for the inmates of the Dunning asylum was more pretentious than any previous entertainment there. Four hundred of the 1,800 patients under Dr. Podstata's charge were assembled in the big hall of the institution and there sat more attentive than many an audience of persons supposed to be possessed of their full mental faculties. Many of the listeners were patients from violent wards, who were constantly under the watchful eyes of their keepers, but none of them gave any cause for anxiety. From the moment of the first number on the program until the conclusion, the audience sat in rapt attention and vociferously applauded each selection. Patients who in their wards are continuously restless, muttering and gesticulating, sat quiet and subdued. One patient, known to be violent, made no more serious demonstration than to rise and move his lips at each outburst of applause. A few of the dull faces did not respond to the charm of the music, but these were rare, and the features of most of the listeners plainly displayed interest and admiration.

Demand for Clean Bill of Health.—In connection with the recent outbreak of yellow fever in New Orleans and elsewhere, Dr. James A. Egan, Secretary of the Illinois State Board of Health, has issued the following notice to railroads: To the General Managers of Railways Entering the State of Illinois: The Illinois State Board of Health hereby orders that until further notice no passengers from New Orleans or other points in which yellow fever has appeared or may appear in the future, shall be permitted to leave trains at any point in the State of Illinois south of the line of the Baltimore and Ohio Southwestern Railway, running from East St. Louis on the west to Vincennes, Ind., on the east. Certificates of health from officials in the infected districts of the south will not be ac-

cepted for the transportation of passengers into that section of the State of Illinois lying south of the line above described until ten days after said passengers have left the infected districts. No passengers from Louisiana, Florida, Alabama, or any other States in which yellow fever has occurred or may occur in the future shall be carried to any point in Illinois south of the line of the Baltimore and Ohio Southwestern Railway, unless provided with certificates of health, signed by national, State or municipal health officers. Inspectors of the Illinois State Board of Health will board all trains passing through the district south of the line of the Baltimore and Ohio Southwestern Railway. Passengers coming from points north of the above-described line will be required to show that they have not been in infected municipalities for ten days prior.

GENERAL.

Congress of Radiology and Ionization.—The first International Congress of Radiology and Ionization will take place at Liège, Belgium, September 12 to 14, inclusive. The Congress will be made up of two sections, one devoted to physical problems, the other to biological ones.

Car Sanitation in Minnesota.—At the last meeting of the Minnesota Board of Health the executive officer was instructed to draw up certain rules and regulations regarding car sanitation, these to be considered in conference with various railway officials and reported upon at the next regular meeting of the board. In carrying out its inquiry, four points are emphasized by the Minnesota board: (1) A sufficient amount of fresh air properly distributed; (2) cleanliness of the car and its contents, including closets; (3) the proper heating of the car; (4) overcrowding. All of these points relate to railway coaches, street cars and sleeping cars. Opinions have been asked by the board as to whether they are given all of the consideration they deserve by the companies operating in Minnesota, and the question is asked whether the board shall undertake to secure better sanitary conditions by formulating certain regulations. Circular letters have been sent out to a number of citizens in Minnesota and the character of the replies will influence the board in its decision.

Thomas Jefferson on Yellow Fever.—A correspondent to the New York *Sun* writes, in part, as follows: A strange coincidence is noted by those familiar with yellow fever epidemics of New Orleans, which have occurred at stated intervals, viz., 1853, 1867, 1878 and 1905, that invariably they have broken out in the same section of the "Old French Town" that caused the immortal Jefferson when President, in December, 1804, to write as follows to Gov. Claiborne: "The position of New Orleans certainly destines it to be the greatest city the world has ever seen. There is no spot on the globe to which the produce of so great an extent of fertile country must necessarily come. It is three times greater than that on the eastern side of the Alleghanies, which is to be divided among all the seaport towns of the Atlantic States. In the middle and northern parts of Europe, where the sun rarely shines, they may safely build cities in solid blocks without generating disease; but under the cloudless skies of America, where there is so constant an accumulation of heat, men cannot be piled on one another with impunity. Accordingly, we find this disease (yellow fever) confined to the solid built parts of our towns, and the parts on the waterside, where there is most matter for putrefaction, but rarely extending into the thinly built parts of the towns, and never into the country. In these latter places *it cannot be communicated. In order to catch it you must go into the local atmosphere where it prevails.* Is not this, then, a strong indication that we ought not to contend with the laws of nature, but should decide at once that all our cities shall be thin built?" After these introductory observations, Jefferson expressed the opinion that in building cities in the United States the people should take the checkerboard for their plan, leaving the white squares open and unbuilt forever and planted with trees. He observed to Claiborne: "As it is probable that New Orleans must soon be enlarged, I enclose you this same plan for consideration. I have great confidence that however the yellow fever may prevail in the old part of the town, it would not be communicated in that part which should be built on this plan, because this would be like the thin built parts of our towns, *where experience has taught us that a person may carry it after catching it in its local region, but can never communicate it out of that.* Having very sincerely at heart that the prosperity of New Orleans should be unchecked, and great faith, founded I think on experience, in the effect of this mode of building against a disorder which is such a scourge to our close built cities, I could not deny myself the communication of the plan, leaving it to you to bring into real existence if those more interested should think as favorably of it as I do. For beauty, pleasure and convenience it would certainly be eminent."

Canal Zone Death Rate Low.—There is a strong feeling in the War Department and the Marine Hospital Service, writes the New York *Sun*, that the public has an exaggerated idea of the unhealthful conditions on the Isthmus of Panama. The death rate, considering the tropical climate, is regarded as low, even under present conditions; the death rate among canal employees is remarkably low for any climate, and it is pointed out that the great work of sanitation inaugurated by the United States Government authorities is only in its early stages. "What is the record? During the entire year 1905 the death rate, in spite of reports to the contrary, has been kept to a remarkably low percentage. The authorities have the great problem of sanitation well in hand, and it is just as certain that they will make the Canal Zone healthy as it is that American pluck and energy will build the canal." A comparison between the conditions which obtained during the first year of canal work under French administration and present conditions shows that the United States officials are solving the question of sanitation. In 1881 the French reported an average force of 928 men on the Isthmus, with a death rate of 66.8 per thousand, while in the Ancon hospital alone the deaths from yellow fever reached the proportion of 23.7 per thousand. The death rate in the Canal Zone among both the 10,000 employees and the uncounted non-employees during the last three months was only 2.6 per thousand, counting the fatalities among both classes and omitting from the equation a number of non-employees. This would make an annual mortality of less than 10 per thousand. The death rate in Washington is 20 per thousand or more. There were but 26 deaths from fever in the Canal Zone during May, June and July, and of this number only 15 were employees, an annual rate of 6 per thousand only. The number of cases of fever, most of which recovered, decreased from 72 in June to 28 in July, due presumably to the scientific efforts of the sanitary officers in screening, cleaning, draining

and taking such other extraordinary precautions as were taken in Cuba in 1898 and 1899. The authorities here say it should be kept in mind that since De Lesseps' time science has solved the problem of checking yellow fever. The United States, therefore, has overcome what seemed to be to the French an unsurmountable obstacle. The marked decrease in the number of cases in what may be considered one of the worst months of the year is also due in part to the new water supply for the city of Panama, that was first turned into the mains on July 4. With half pressure on a six-inch main twelve streams of water were thrown higher than the Administration Building, and this pure water is now turned in on several mains through the center of the city. Faucets have been attached to the hydrants and the people are now provided with free water. The advantages of this improvement can only be appreciated, the War Department officers say, by those who are acquainted with conditions that formerly obtained, and can scarcely be overestimated. Another important change that is expected to add to the health of the Isthmus is now well under way and that is the establishment of comfortable quarters along the entire line of the canal. By the end of the present month every non-immune employee can be comfortably lodged outside of Panama and Colon, which appear to be the only two foci of the diminishing fever on the Isthmus. Plans are also under consideration looking to the establishment of a refrigerating system, so that meat, vegetables, eggs, butter, poultry and other food stuffs can be brought from cold storage in the United States, transported in cold storage by vessels to the Isthmus, and then distributed by refrigerating cars to the ice-boxes of the hotels and boarding houses along the line of the canal. With the installation of this service the personnel of the canal will be properly housed, will have pure water, will be well fed, and the question of proper sanitation will, it is believed, be solved. The most efficient scientists and engineers have told the War Department that they are thoroughly convinced that eventually the Isthmus will be a pleasant and agreeable place of abode. They say that the fever is not indigenous to the Isthmus. The nights are cool, and, with the exception of a period in the middle of the day, the heat is not oppressive.

The Alaska Trip of the American Medical Association.—The meeting of the American Medical Association, which has just been held in Portland, has had an element of success that was due wholly to the hospitality of the Portland physicians and their wives. The formal discussions of medical matters which appear in print are of but faint interest compared with the intimate personal exchange of opinions concerning practice, ethics and ways and means of men living under conditions as varying as those in New York and Duluth, or New Orleans and Seattle. Given an equal number of delegates to any European congress, one would find a bar to intimacy in language, religion and nationality. But at this meeting on the western coast the physicians who met in Portland were typically American, men who had merged the foreign birth and breeding of ancestry in the universal citizenship, and who dropped the language of science for the language of friendly intercourse, and without barriers of reserve showed themselves as they were, the genial, sympathetic family physician, the scientific student, the agitator for educational advancement, and the specialist of every branch. Never has there been such a protracted opportunity for the physicians of our land to compare notes. Under the guiding eye of the energetic committee of Portland, who saw to the gathering of the clans, the physicians found themselves congregated in parties and brought in special trains through the Yosemite, or the Yellowstone, or the Canadian Rockies, with facilities for returning in parties by another route when they had been able to determine their choice, based on the enthusiastic reports of those whom they met at the convention. The whole trend of the entertainment was for the better acquaintance of men who had met but yesterday, and for the reunion of old friends. To this end there were receptions at the homes of the physicians, and in the large buildings at the Fair Grounds. There was a day spent on the Columbia River, with salmon fisheries and great snow-capped peaks for diversion, and a beautiful salmon banquet served by the ladies in a grove of pines far up the river. There was a reception and a supper and much diversion at The Oaks, the new pleasure resort of Portland. In fact, no moment outside of business hours was left unfilled with entertainment. But the crowning event of the trip was the expedition to Alaska, which was planned with every detail of care for comfort and for extensive sight-seeing. The enthusiasm for this trip was so high that by the time the meeting was over another boat could have been filled had numbers signified their desire in time. As it was, the early applicants were fortunate, and almost one hundred and fifty, physicians, wives, sons and daughters, went to Seattle, where the local physicians had rushed home in time to lunch and dine them and show them their city before the party sailed in the steamship Jefferson.

Puget Sound, at the sunset, with its snow-capped Olympic Range, and the great white peak of Mt. Baker, is a sight long to be remembered, and clear weather at the start enabled the party to have this view as a climax to the first day's panorama. Nor did the weather fail at the critical moments, for when the party reached Lynn Canal and the great White Pass the skies were clear and the weather warm, and continued so through the rest of the trip. In fact, the balmy weather and the sunny, flowery aspect of Alaska was as much of a surprise to those who had accepted their impressions from school books as was the wonderful railroad over the White Pass to those who had so recently read of the rush to the Klondike over the trail across the mountain. The gold fever almost tempted some of the party to push on three hundred miles farther to Dawson, but the memory of lucrative practices at home sobered their judgment; yet, when they left Sitka it was with a feeling of sore need for a lining of gold dust in their empty pockets. Sitka, the once seat of the Russian government in Alaska, the historic town with its ancient, fire-shaded boulevard by the island-gemmed sea, with its library and Russian church, its old samovars and furs and quaintly wrought silver; Sitka, with its row of Indian girls sitting with their finely-woven baskets under the shade of the pine trees, proved too much for the prudence of the company, and after paying their respects to the Governor and his wife, they bought generously, enthusiastically, frantically, mocassins and baskets and totem poles.

Through the courtesy of the officers the famous Treadwell mines were thrown open to the party, and they stood at the rim of the great Glory Hole, where miners that looked like ants crawled around and blasted quartz, then carried it up the steep rocks, where it was crushed and washed and the rich pay dirt collected for final smelting.

But the most wonderful experience of all was on

afternoon spent in a sea of icebergs, where the shining Foster Glacier was pushing its tall white ice-cliffs into the sea. The Jefferson slowly made its way between the great blue floating grottoes and towers, then put off life-boats with the party, who were cautiously rowed between the ice-floes to the pebbly beach at the foot of the Taku Glacier. There the stout and slim alike were carried ashore on the sailors' backs. And after a walk of a mile or more over the rubble of the terminal moraine they climbed the glassy slope of this retreating glacier that now melts and deposits its burden of stones before it reaches the sea. To share adventures with those with whom heretofore one has merely shared scientific opinions is to establish a friendship between men of widely different residence that would otherwise take years to form.

OBITUARY.

Dr. M. S. GRAHAM, of Rochester, died in that city last week, aged fifty years. He was chief surgeon at the Hahnemann Hospital there and conducted a sanitarium. He had been President of the County Medical Society, and was a member of a number of other medical societies and a prominent Mason.

Dr. ROBERT MAITLAND PETRIE died suddenly at his home, Jersey City, last week, from heart disease. Dr. Petrie was born at Liberty, N. Y., in 1850. He was a son of the Rev. Dr. Petrie, who in 1856 became the first pastor of the first Presbyterian Church erected in Jersey City. Dr. Petrie was educated at Princeton and afterward studied medicine at the University of Pennsylvania. He was a member of the State Pathological Society, and was regarded as an authority on heart disease.

SOCIETY PROCEEDINGS.

AMERICAN SURGICAL ASSOCIATION.

Twenty-sixth Annual Meeting, held at San Francisco, Cal., July 5, 6 and 7, 1905.

The President, Geo. Ben Johnston, M.D., of Richmond, Va., in the Chair.

After a brief executive session, Dr. Emmet Rixford, of San Francisco, First Vice-President, took the chair, and President Johnston delivered his address.

John Peter Mettauer.—He selected for his subject "John Peter Mettauer," saying that little was known of his childhood and youth beyond the fact that, raised in an atmosphere of surgery, he imbibed a love for this profession and early determined to adopt it as his life's work. He was born in 1787. Mettauer's medical education was carried on under the most favorable conditions obtainable in America at that time. For a period of about forty years the number of surgical patients who gathered to Mettauer for treatment was sufficient to keep him constantly with from 45 to 60 cases under his care. Often it was true that about every good house in the community sheltered some person who was convalescing or awaiting his turn for operation. The speaker had heard his operations for cataract put in number far beyond the 800 that could be accounted for. Dudley's great record in cutting for stone 225 times in a practice of forty years must yield to Mettauer's total of 400 operations, and the number of strictures relieved was commonly put at something over 200. Three operations were recalled, performed in the last week of his life, when at the age of eighty-eight years his eyes were yet keen enough and his hands steady enough for him to make a successful operation for cataract, for stone, and for amputation of the breast. But Mettauer's most brilliant work in the way of operations was his method with vesicovaginal fistula, and his successful employment of wire sutures made of lead, in which he antedated by a good many years even Sims, whose name was generally associated with this operation. So successful was Mettauer that he declared his belief that every case of this sort was curable by his method, and so far as his efforts were reported, the speaker was not aware that he ever failed in one. Proper pride and regard for his own reputation in the coming years must make every surgeon careful to a degree in assigning credit for useful and honorable achievements to those who had preceded him, and there was in the history of surgery no claim more clear and unmistakable than that of John Peter Mettauer to the honor of discovery in this case, and he was plainly entitled to rank in medical history and in the grateful memory of his successors in the same class with McDowell and Dudley and Sims and Mott. Mettauer's first reference to the operation of vesicovaginal fistula appeared in the *Boston Medical and Surgical Journal*, Vol. XXII, p. 154, twelve years before Sims' communication, and it clearly outlined the operation which ought always to be associated with his name. Mettauer was decidedly of the opinion that every case of vesicovaginal fistula could be cured, and his success justified the statement. Reference was made to the eccentricities of Mettauer, and among them was his invariable custom to wear on all occasions and at all times a preposterously tall hat. One of his children, now surviving, had told the speaker that she never saw her father without his hat on. He never attended service in the churches, and the explanation was always assumed to lie in the unwillingness either to remove the covering from his head or to attend church wearing his hat. He would decline to take off his hat in court on the occasions when his expert testimony was sought, and the sole occasion on which a Judge seems to have insisted that the doctor should be uncovered brought from Mettauer the suggestion that if his evidence was essential to the cause he would be pleased to give it with his hat on, and that if it were not so he would be quite as well pleased to leave the court-room, meanwhile, of course, wearing his hat. Dr. Johnston said that so great was his interest in seeing full justice done to the genius of Mettauer that he was seriously contemplating some extended work in the way of a biography.

End Results in Surgery of the Kidney.—Dr. Albert Vander Veer, of Albany, N. Y., read a paper on this subject, which was based on a review of ninety cases occurring in his own practice. The first largest group was composed of movable or floating kidney. These numbered twenty-three cases, exclusive of those where excision of the capsule for neuralgia, examination for stone, and decapsulation for Bright's disease was done. Nineteen of these cases occurred in the female, about two-thirds of whom were married, the lesion being on the right side. There were four males, the lesion also occurring on the right side, and the entire number recovering. One required removal of the kidney four years after for abscess of the pelvis and stone; good recovery.

He next presented a series of twenty-four cases of nephrotomies, in which there was a surgical lesion of the kidney, grouped under the heading of pyelitis, pyonephrosis, pyonephritis, or ascending pyelonephrosis. The series was divided as follows: Male, right side, two recovered, one died; male, left side, six recovered. Nine of these cases finally required nephrectomy, one

of the latter resulting in death. Of the remaining fifteen cases all made good recoveries, but one of them, after a period of four years, had a slight sinus, not deep, no pus, patient in excellent condition; the other patient recovered from the kidney complication, but developed a pelvic abscess, which was still draining, and she was gradually losing ground. In the cases of nephrectomies for hydronephrosis there were eight, as follows: Male, right side, two recovered; female, right side, three recovered; female, left side, two recovered, one died. Regarding the removal of the kidney by the transperitoneal incision, the author stated that it was an exceedingly easy and convenient way of removing a large cyst or tumor, the patients doing nicely afterwards. Of these there were four cases.

He then cited two cases of hydronephrosis in young women who were entirely cured by simple aspiration. Of nephrotomies, followed later by nephrectomies, there were nine cases, as follows: Male, right side, two recovered; male, left side, one recovered; female, right side, three recovered; female, left side, three recovered. All of these cases made a good recovery from the two operations, with the exception of two patients, one dying a few months after from multiple abscesses of remaining kidney, and the other, still alive, was gradually failing in strength.

The author was greatly impressed with the study of tuberculosis of the kidney, as to whether the invasion occurred from below or from systemic infection. There were seven of these cases, as follows: Male, right side, one recovered; male, left side, two recovered; female, right side, one recovered; female, left side, three recovered. There was a total of eight cases of malignant growths in connection with the kidney, as follows: Sarcoma.—Male, right side, two recovered, one died; male, left side, one died; female, right side, one recovered; female, left side, one died. Carcinoma.—Female, right side, one recovered, but died later from return of the disease. Hypernephroma.—Male, left side, one recovered. Of decapsulation of the kidney for nephritis, there were two cases that recovered; results excellent. Of traumatisms and injuries of the kidney, there were six cases. Of cases of renal neuralgia, associated with suspected stone of the kidney, the author was not able to confirm his diagnosis by exposure of the organ. The entire group was made up of six patients, and in only one instance was the diagnosis confirmed by needling of the kidney.

The author then reported some irregular cases, and concluded his paper by reporting two cases of abdominal surgery which illustrated errors in diagnosis, in which the real trouble was with the kidney.

In a review of the cases presented in this paper, one was impressed with the very excellent results following the operation of fixation of the kidney. In the hands of all operators the mortality list was exceedingly small. Wearing of a bandage, with kidney pad, was exceedingly irksome to many patients who gladly consented to surgical intervention, when the prospects for recovery were so good.

The combined operation of nephrotomy and nephrectomy later for abscess of the kidney was appropriate for such cases as would not bear too long an operation, and where there might be a large kidney, made up of multiple abscesses in such a way as to make manipulation of the organ quite difficult. Simple drainage benefited the patient for a time, often causing a diminution of the mass to be removed later. In the purely cystic form of kidney, a true pyonephrosis, an immediate nephrectomy was proper in the majority of cases. Following a nephrotomy or nephrostomy a fair number of cases recovered without further intervention. In a large pus kidney there was always some danger in a nephrectomy causing an infective peritonitis. In traumatisms of the kidney firmness and decision on the part of the surgeon were an absolute necessity. There were no other form of emergency surgery more exacting. In cases of movable or floating kidney, giving such marked symptoms that the surgeon was often led to believe that he had a stone to deal with, the speaker admitted that our diagnoses were very far from correct, and the cases here reported were disappointing by reason of not finding a calculus present. It was sometimes difficult to diagnose between a neuralgic kidney and one containing a calculus in its pelvis. Splitting of the capsule relieved pain in cases that could only be classified as a neuralgic condition. It was yet a mooted question as to how much could be accomplished by resection of the kidney for relief of abscesses and growths. The cases of tuberculosis reported manifested decidedly the importance of an early operation, and gave a most encouraging outlook for these patients regarding permanent recovery. Malignant growths made the mortality list, and yet there was much hope for these cases if reached early. Surgery of the kidney was becoming more and more exact with the splendid advance made in methods of examination of the urine, etc. Errors of diagnosis would occur less frequently in the practice of abdominal surgeons as methods of examination became more perfect.

The writer was impressed with the oblique incision, which had been employed in nearly all of his cases during the past ten years. The one case of hernia reported resulted from the old incision, parallel with the spine and transversely through the muscle, causing a lumbar hernia, but none of the others presented this complication. It will be observed that in a total of about 90 patients there were 123 operations done. This was readily accounted for because of the patients requiring more than one operation. The rate of mortality was exceedingly small, malignant disease and abscesses of the kidney being alone responsible.

Dr. William J. Mayo, of Rochester, Minn., asked the essayist whether he took out the ureter or considered it necessary to remove it in cases of tuberculosis of the kidney. Also, whether any of the cases in which nephrotomy for tuberculosis of the kidney was performed had been followed by permanently good results. Recently he had gone over the histories of some 36 nephrectomies for tuberculosis of the kidney, and had found that a large number of people who were supposed to have tuberculosis of both kidneys in the early stage had only one kidney involved. Careful examination had shown in the majority of these cases, according to his recent experience, that the tuberculosis was confined to one kidney. He thought a large majority of cases of tuberculosis of the kidney were one-sided to start with; that his experience, as furnished largely from post-mortem examinatons, was that the second kidney became involved at the time of death, and that therefore he had post mortem rather than living evidence of the fact that in the early stages the percentage of cases in which tuberculosis of the kidney was bilateral was small.

Dr. Archibald MacLaren, of Minnesota, mentioned the ease with which a kidney could be removed after resection of the twelfth rib. He got this idea from Dr. Mayo. He had tried this in a recent case and found he could do the operation much easier by resecting the twelfth rib, although he opened the pleura. The opening could be plugged with gauze.

Dr. Vander Veer, in closing the discussion, said, in reply to Dr. Mayo, that the tuberculosis was confined to one kidney in his cases, and he had no record of bilateral kidney tuberculosis. In regard to the removal of the ureter, in the first case he operated upon he did not remove the ureter, and in one case he had to do a secondary operation on account of relapse. In regard to Dr. Carson's case, he had seen almost a duplicate of it in that there was a sarcoma which involved the gall-bladder and right lobe of the liver.

Non-Parasitic Cysts of the Spleen.—Dr. Chas. A. Powers, of Denver, Colo., in a paper with this title stated that this subject had a twofold origin. *First*, the few and comparatively recent clinical reports; *second*, the somewhat more numerous accidental post-mortem findings. In September, 1895, a young man of eighteen was referred to him who presented a large right-sided abdominal cyst. The mass was of four years' growth. There had been a gradual loss of flesh and strength, anorexia, headache and general pressure symptoms. Fluctuation was plain. The diagnosis of a splenic cyst seemed positive. A free incision was made over the prominent part of the tumor, the walls of which were found to be about one-half of an inch thick, semi-cartilaginous and solidly adherent to all the adjacent structures. Extirpation seemed impossible. Later autopsy findings confirmed this. The single cyst held several litres. A posterior incision was made with through drainage. The walls of the cyst did not collapse and the patient died of septic absorption from the cyst wall on the twelfth day. The anatomical diagnosis was hemorrhagic cyst of the spleen. From the autopsy findings the author could not see how the cyst could have been successfully extirpated.

He presented a brief analysis of thirty-two tabulated cases. In considering the treatment, he spoke of puncture, incision and injection, incision and drainage, marsupialization, resection of cyst and splenectomy.

Status Lymphaticus and the Ductless Glands.—Dr. Roswell Park, of Buffalo, N. Y., defined the term status lymphaticus and stated that the reason for bringing the subject before a body of surgeons was because the condition itself had so much to do with the question of toleration of anesthetics, and the matter of repair of wounds, that it really was one of exceeding importance. Not a few cases of sudden death during and after operation were to be explained by the abnormalities constituting this condition. These had usually been attributed to the anesthetic or the anesthetist, and it might be that had the latter appreciated all the dangers offered by the condition he would have guarded his anesthetic, or perhaps abstained from giving it. Nevertheless, the anesthetizer was not always to blame, because he was often called in without previous knowledge of the case, it being really the function of the medical attendant to carefully study it and determine its peculiarities. The relation which the lymphatic system and the lymph-making organs bear to each other and to the ductless glands was as positive as it was obscure. Lymphoid tissue throughout the body seemed to increase as the thymus normally disappeared. In infantile marasmus the thymus had usually completely and prematurely disappeared, its condition being a fair index as to general nutrition. But it was hypertrophy rather than atrophy of the thymus which most interested the surgeon, since those individuals who die suddenly and unexpectedly usually had an enlarged thymus. There certainly existed strange relationships between the pituitary body, the thymus, the thyroid, the coccygeal body, the testes, the ovaries, and perhaps the bone marrow. In this list the quite recent researches relative to the parathyroids should also be included. A clearer recognition of the function of the latter seemed to have changed the whole aspect in which we should regard Graves' disease, it being made quite probable that this condition was due rather to atrophy of the parathyroids than to excess of the thyroid or its secretion. In the ordinary forms of cystic goiter, where thyroid secretion was not augmented, the symptoms of Graves' disease were lacking. It was usually after removal of the thyroid proper that the opposite symptoms of Graves' disease appeared, *i.e.*, myxedema and cachexia, while when the parathyroids were taken away the peculiar symptoms of Graves' disease appeared.

The life history of the thymus was closely related to that of the testes. Atrophy of the former would seem to depend upon complete maturation of the latter. These statements could be corroborated by a study of cryptorchids and castrated animals. The status lymphaticus was also described under the terms lymphatism, lymphatic constitution and status thymicus, the condition having apparently more to do with thymus than with any other isolated organ. Thymus extract produced in animals a fall of blood pressure with acceleration of the heart, and, in fatal doses, collapse. Thymic enlargement might cause death by pressure on important structures, even distinct from the trachea. Thymic asthma, a condition known for some time, was one in which death sometimes occurred most unexpectedly and quickly. In these cases not only was the thymus enlarged, but there was found a general hyperplasia of the lymphatic tissue, with enlargement of the lymph nodes and of the spleen. The relations between status lymphaticus and rickets were frequent and pronounced. Nearly all cases of the former displayed the ordinary clinical evidences of the latter. The participation of the lymphatic system was most casually apparent in the involvement of the faucial, laryngeal and lingual tonsils, *i.e.*, the so-called adenoids of the throat specialists. It was notable that it was in these cases the death most often occurred during or after anesthesia. Thymic asthma was practically the same thing as laryngismus stridulus. The occurrence of this in children ought always to serve as a warning, as well as an indication for careful study and treatment. Should, then, chloroform be given to such a case, inadverently or unnecessarily, the agent would not be nearly as responsible for the death as the practitioner who employed it. The condition was to be recognized by the ordinary evidences of rickets which were usually present, by generalized enlargement of the lymph nodes, the presence of adenoids in the naso-pharynx, a history of laryngismus stridulus or special liability to spasm of the glottis, perceptible enlargement of the thymus or by notable enlargement of the tyroid or spleen. In the young these conditions simulated cretinism. Such a clinical picture as would afford the above features should serve as a warning and make one abstain from the use of anesthetics unless absolutely necessary, while it should also prompt carefully directed treatment. This treatment should consist in careful attention to elimination, as well as to nutrition, while thymus or pituitary extract should be administered internally, as well as the glycero-phosphates or some similar up-building tonic. If, now, it should be necessary to clear out the nasopharynx in such a case, the parts should be first desensitized by cocaine, to which a little adrenalin might be added, even previous to beginning anesthesia. If the patient be known to be subject to glottic spasm, one should be prepared to do a tracheotomy on an instant's notice, and especially so if the thymus be perceptibly enlarged. One might even have to use a long

trachea tube. Operations of convenience should be postponed until the patients can be carefully built up. Operations of necessity may be practised with the above precautions, while in cases of impending or actual emergency one might depend upon artificial respiration after tracheotomy and the use of adrenalin.

Patent Urachus, with a Review of the Cases Reported; Operation on a Case Complicated with Stone in the Kidney.—Dr. Geo. Tully Vaughan, of Washington, D. C., explained the defective development in embryology which leads to the formation of patent urachus and of Meckel's diverticulum. He gave a short review of the literature and stated that the older anatomists held different opinions as to whether the urachus was a tube or a solid cord. He divided cases of patent urachus into the complete, blind, blind internal, and blind external, and into congenital and acquired varieties, and explained the occurrence of some cases of acquired patent urachus by the pressure of urine in the bladder from obstruction to its normal outflow, causing Wut's valve (a small valve which guards the bladder opening of the urachus) to give way and permit urine to enter the urachus, when, if infection took place, abscess formed, and pus broke through the umbilicus or discharged into the bladder. He briefly recounted 52 cases reported in the literature and added one case of his own, of which 38 cases were operated on, with 32 recoveries, 3 deaths, and in 3 the result was not reported. He divided the methods which had been tried for closing the open urachus into 8 classes, as follows: (1) The application of caustic or of the actual cautery to the umbilical opening. (2) The use of the cautery and of ligatures or sutures. (3) The use of ligature or suture only. (4) Plastic operations, the application of a flap of skin to close the opening. (5) To open or slit up the urachus, curet or cauterize, and pack. (6) Removal of sources of irritation from the urachus, such as stones, pus, etc., and keeping the parts clean. (7) Removal of obstruction to the flow of urine from the bladder through the urethra, as a tight prepuce, strictures of the urethra, hypertrophy of the prostate, and tumors or stone in the bladder. (8) Extirpation or dissecting out of the urachus and sewing or ligating the part next to the bladder, after the manner of treating the appendix in appendectomy. The author did not approve of the method of simply closing the umbilical end of the fistula, lest an infected suppurating area be left which might cause septicemia or peritonitis. He considered slitting open and packing the abscess cavity a rational operation, but thought the operation of election was to dissect out the urachus with the entire diseased area. Dr. Vaughan used this method in his case—a man of forty, who had an acquired patent urachus since the age of seventeen. A month after the patent urachus had been cured it was necessary to perform nephrolithotomy on the right kidney, and nine months later the same operation on the left kidney. A brief consideration was given to tumors and cysts of the urachus.

(To be Continued.)

The Yellow Fever Situation.—Up to the present time there is little change in the southern yellow fever situation. The Federal authorites under the Marine Hospital and Public Health Corps have been called in, and are in practical control of the situation. It remains to be seen how well they may be able to apply the methods which are now held to be preventive. About 700 cases of infection have been reported to date with a mortality about 20 per cent.

THE AMERICAN MEDICAL ASSOCIATION.

Fifty-sixth Annual Meeting, held at Portland, Oregon, July 11, 12, 13 and 14, 1905.

(Continued from Page 288.)

SECTION ON OBSTETRICS AND DISEASES OF WOMEN.

(Continued from Page 236.)

THIRD DAY—JULY 13TH.

Some Complications of Pregnancy Treated Surgically.—Dr. F. C. Donoghue, speaking of the complications of pregnancy that require operative interference cited appendicitis, ileus, ovarian tumors and fibroids. He concludes his study with citations of cases as follows: When there is a history of a well-marked attack of appendicitis in a young woman, operation should be performed as an antecedent to marriage. Operation should be advised prior to marriage if tumors of the uterus or appendages are known to be present.

Pulmonary Tuberculosis as an Obstetrical Complication.—Dr. Charles Sumner Bacon, of Chicago, computes from the statistics of Chicago and other cities that there are probably between 24,000 and 31,000 pregnant women in the United States suffering from tuberculosis. Except in very rare cases tuberculosis is not a cause of sterility, therefore an ethical as well as a physical question is raised in connection with marriage or the desire for children in a woman suffering from tuberculosis. The effect of pregnancy on the woman is bad. Such effect is more apt to appear when the desire is already well advanced, or when nutrition is low from other causes. For this reason nausea and vomiting increase the danger. The pressure against the diaphragm may interfere with the circulatory system. The exhaustion of attending labor sometimes leads to fatal termination. In all cases the enforced confinement in imperfectly ventilated rooms is injurious, therefore in mild cases pregnancy may be considered a serious complication of tuberculosis, and in advanced cases a very dangerous one. The effect of tuberculosis on pregnancy is slight except where there is considerable fever and coughing, in which cases absorption is common. The fetus is rarely infected. The chances are that the child will be born free from tuberculosis, but that it may possess a predisposition to the disease. A pregnant woman in an advanced stage of tuberculosis is apt to die shortly after labor, if the labor has been severe; in milder cases the woman is apt to go to pieces during the puerperium.

Restriction on Marriage.—The question of imposing restrictions on the marriage of tuberculous individuals by legislative enactment has been widely discussed without satisfactory answer. Each case requires judgment concerning the expediency of allowing the pregnancy to continue when a couple in comfortable circumstances desire a child, and the wife had only some slight tuberculous involvement of the lungs. She can be put into the best hygienic surroundings during her pregnancy and puerperium. When, however, a woman must care for her house and remain indoors, and when she would be obliged to nurse and care for her baby, conception should be absolutely forbidden. For these patients artificial sterilization is a legitimate and praiseworthy operation. It is better to determine on an operation that does not remove the ovaries. The vaginal resection of the tubes is generally the simplest and best, un-

less some other pathological condition indicates laparotomy, when, of course, the abdominal resection would be done. When a probability of the cure of consumption remains, some other means of preventing conception may be advised. It is not necessary to advise abstinence from sexual intercourse. The question of interrupting the pregnancy depends upon the gravity of the patient's tuberculosis, and the kind of care she can afford to have. In case of inability to have hygienic surroundings or when there is a complication of tuberculosis with heart or kidney disease, an abortion should be performed. The operation should be decided on before the twentieth week. Later an attempt should be made to carry the child to the period of viability. Rapid emptying of the uterus is the best method of inducing abortion. Anesthesia, preferably by means of ether, is not contraindicated. After the period of viability is reached labor should be induced if there is failure of nutrition, exhausting cough or severe dyspnea. Otherwise it may be postponed till the thirty-sixth week. The bougie method should not be employed, but rather the method of operation should be that which hastens labor. In the most urgent cases, a vaginal Cæsarean section may give a better chance of saving mother and child. Oxygen should be freely used at the first sign of exhaustion, also strychnine as a tonic should be given hypodermically as indicated.

During the forty-eight hours of the puerperium, oxygen, strychnine and physiological salt solution should be at hand, as the most imminent danger is from circulatory disturbances. Later the nutrition and fresh air are of the most importance. The patient should, if possible, lie most of the day in the open air. The child should never be nursed by its mother, nor remain in the same room with her. When possible it should be fed by a wet nurse. Complication of puerperal fever with tuberculosis of the puerperium is, of course, the greatest danger. On the whole, Dr. Bacon believes that by the use of oxygen during labor, and the thorough use of the fresh air, rest and feeding cure, before and after labor, that many of the consumptive pregnant women in the United States can be brought through pregnancy and the puerperium, and eventually, perhaps, be cured.

Maternal Syphilis.—Dr. George S. Whiteside, of Portland, Ore., said that syphilis in the mother without paternal syphilis is rare, while the reverse is common; therefore maternal syphilis may be defined as only the disease of the pregnant woman. He called attention to the lack of careful discussion of the subject in textbooks, and to the great difficulty of making a diagnosis of syphilis in married women. Their own ignorance of the disease, their belief in their husbands, combined with the reluctance of a man to confess his unfaithfulness to his wife's physician, all tend to obscure the diagnosis unless the symptoms are very definite. Therefore, he cautions physicians to look oftener for syphilis, and they will find it explaining obscure symptoms. He advises the free use of mercury for pregnant syphilitic women as the only way of protecting the health of the fetus from inheritance. If the child survives the first acute febrile outbreak of secondary symptoms it will probably respond to treatment and very likely grow up a well individual, especially if born in the better classes. Even in cases where some deformity of bone has taken place, as in hydrocephalus, anti-syphilitic treatment often causes an absorption of the products of the disease, and later the deformity is not noticeable. Mercury is best administered to the infant by inunction, but it may be necessary to use hydrarg. cum cretâ in spite of the action of the bowels. Treatment should be continued for two months after all symptoms have disappeared.

Physiological and Legal Status of the Fetus in Utero.—Dr. W. H. Sanders, of Montgomery, Ala., considered this subject from an ethical point of view. Truly a child was alive from the very moment of its conception. He pointed out certain differences between the processes of conception in plants and animals, and argued that it was not justifiable to consider the human child as a living being with its rights and privileges only after it had been delivered from its mother. It was really an independent organism nine months previously.

Present Day Methods of Conducting Labor Cases.—Dr. J. A. McKenna, of Lansdowne, Pa., made a strong appeal for fuller asepsis and antisepsis in maternal works. From the fact that thousands of women still die of puerperal sepsis it was urgent that this factor should be eliminated. He was not in favor of intrauterine douches, but laid much emphasis on the proper cleansing of the hands of the obstetrician. A physician's hands were septic instruments, and only the most painstaking cleanliness could render them even approximately sterile. The forceps are a potent cause of septic infection, and should be used as rarely as possible.

Female Bony Pelvis.—Dr. Effa V. Davis, of Chicago, gave the results of a series of pelvic measurements made in her private, hospital, and dispensary practice for the past five years. In her measurements of 124 pelves she had found that 26 per cent. were deformed. Of these 70 per cent. were of the contracted pelvis order, 15 per cent. were flat. In her women with deformed pelves she had had 61 per cent. of normal deliveries. In contrasting the influence of surroundings, occupation, diet, etc., on the size and weight of the infant, she had found that in 88 women, who were well-to-do, ate good food, and were not compelled to work, the average weight of the child was 8.06 pounds. In 38 who were in moderate circumstances, but who did much of their own work, and led a more active life, the average weight was 6.7 pounds, while in nine patients who were badly fed and overworked, and who lived in very poor surroundings, the average weight of the child was 5.77 pounds. She had found that more deformed pelves were found among her clients who were natives of the United States than among the foreign born. She insisted on a regulation of the diet to control the size of the child in all those who had small pelves, and who were afraid to have large babies. She concluded her study as follows: Deformity occurs often enough to make pelvimetry a practical part of the examination of pregnant cases. Generally contracted pelves form by far the most common deformity in American women, though the rachitic pelvis is often present in those who have been artificially or imperfectly breast-fed in infancy. Inebriety in the parents is the most constant element toward degenerate types in the deformities studied. The size may be regulated by diet and exercise if carried out strictly for a proper time during the last three or four months of pregnancy.

Maternal Impressions.—Dr. E. T. Shelly, of Atchison, Kan., spoke with much emphasis, denouncing the maternal impression hypothesis as an unmiti-

gated and unwarranted superstition. Teratologists were emphatic on the subject and with unanimity stigmatize the idea as a popular delusion, but practitioners could not be made to give it up, notwithstanding the overwhelming evidence of embryology, anatomy and physiology against it. He held that it was very unwise, even criminal, for the general practitioner to countenance the belief in his patients, and thought that if they all combined to "down" the delusion many happier hours would be vouchsafed the pregnant woman.

Syncytioma Malignum.—Dr. Lauratt Branson, of Iowa City, reported the history of one case of this condition, and read an essay on the subject.

(To be Continued.)

NEW YORK PATHOLOGICAL SOCIETY.

Stated Meeting, held March 8, 1905.

The President, Harlow Brooks, M.D., in the Chair.

The Identification of the Pneumococcus in Blood Cultures.—Dr. Thomas Flournoy described a characteristic appearance of the pneumococcus which he had seen in his work. Although made independently, his observations could only be taken as corroborative of Schottmüller's and of Rosenow's, which had appeared previously. In the course of a number of blood cultures made upon cases of lobar pneumonia it was noticed that colonies of the pneumococcus developed a brilliant green color in blood-agar plates. The blood cultures had been obtained by inoculating 1 c.c. of blood into a tube of melted agar and plated at the bedside of the patient. In this way a uniform mixture of blood and agar was obtained. The specimens were chiefly from severe, well-marked cases of lobar pneumonia. One was from the blood of a case of meningitis which was due to the pneumococcus. From the plates inoculations were made into other media and into mice. The green color was constant in the colonies of all these cases. It was seen best macroscopically and by transmitted light, but could also be seen under the microscope. The bacteria isolated in the cases mentioned were all fairly easy of identification by the ordinary cultural and staining methods. No work had been done on more doubtful strains. Apparently, however, the pneumococcus in a mixture of blood and agar develops a color not found with the ordinary pathogenic cocci. The explanation of the development of this color might possibly lie in some process comparable to the breaking down of old hemorrhagic foci in the body.

Dr. E. Libman, in the discussion, said that he had noticed the phenomenon but had not made many tests himself as most of his pneumococcus work was done on fluid media. It seemed that it was a method which was worthy of further trial because it would be a very rapid means of diagnosis, particularly if combined with some of the newer capsule stains.

Preliminary Report Concerning the Effect of the X-rays on Karyokinesis.—Dr. Harlow Brooks said that he had only a few words to say on the work which he and Mr. Goldhorn had been doing, because they had so far found only a few things of definite character. The investigation had been suggested by a presentation of Dr. Tilden Brown's a few weeks ago, before the Section on Genito-Urinary Diseases, in which he stated that in one hundred per cent. of the cases in which he had investigated the spermatic secretion of X-ray operators he had found absolutely no spermatozoa. The results of the few cases examined by the speaker confirmed this. Investigations were carried on to find what changes led to this absence of spermatozoa. Rats were selected for the experiment on account of the fact that in these animals spermatogenesis takes place very actively. So far the animals had been exposed only to the deep penetrating ray; that is, the ray which is designed to affect the deeper structures. Exposures were made for from fifteen to twenty minutes daily up to eighteen days. So far the results had been only very suggestive. Plates were shown indicating some of the changes found. At first exposure to the X-ray greatly excited the secretion of spermatozoa and if anything they were rather more active than normal. Although much work was still to be done they felt confident in saying that the X-ray increases the production of spermatozoa: that the X-ray after a considerable number of exposures does cause certain degenerative changes in the cytoplasm of the cells: that the X-ray does excite marked changes in the chromatin of the spermatocytes. So far the changes were not distinct enough to allow of conclusions being drawn from them. They were like changes found in a lesser degree in the normal. Later on karyokinetic changes took place which it was believed eventually resulted in the destruction of the chromatin of the spermatocytes and the formation of spermatozoa deficient in chromatin or entirely lacking heads.

Dr. James Ewing, in the discussion, inquired whether Dr. Brooks had any intention of using radio-activity as well as simple X-ray treatment. As he understood the nature of radio-activity and X-rays there were at least three forms of energy manifested. One of these was concerned with the emanation of a gas which was more active on the tissues. Did Dr. Brooks intend to employ all three forms of radio-activity?

Dr. Brooks said that so far they had found their studies so much more difficult than they had anticipated that they had no desire to undertake anything more. They had found great difficulty in carefully controlling the experiments. Many things had been seen in supposedly normal testicles which had not been before described.

The Practical Value of R. Stern's Bactericidal Test of Typhoid Sera.—Dr. Mary E. Goodwin gave a short account of her experiments with the above test, prefaced with an abstract of Stern's work. R. Stern, of Breslau, after examining the blood of fifty-nine typhoid and ninety non-typhoid cases for its bactericidal power on typhoid bacilli, decided that the bacilli were destroyed by much higher dilusions of the typhoid blood than of the normal. He found no fixed relation between the day in the disease when the blood was taken and the mount of immune body it contained. He gives as his strongest serum one which showed a decided reaction in a 1-4,000,000 dilution. The earliest day on which the bactericidal power was marked was the eighth, in one case the serum reacting in a 1-40,000 dilution and in another in a 1-4,000 dilution. The agglutinating power of the typhoid sera was not shown in nearly as high dilutions as the bactericidal power. He concludes by saying that the higher the dilution showing bactericidal action the greater the probability of the case being typhoid. His technic is briefly as follows: After inactivating the sera at 55° C. for thirty minutes, he makes the dilutions with 0.85 per cent. salt solution. For the complement he takes fresh rabbit serum in a dilution of one part to eleven of salt solution. The typhoid culture used was one which had been isolated about one year and was of moderate resistance, he having found that those recently isolated were too resistant, while the old cultures were killed by the rabbit serum alone. He put together in small test tubes 1 c.c. of the

serum dilution, ½ c.c. of a 1-5,000 dilution of a twenty-four hour bouillon typhoid culture in bouillon and ½ c.c. of the diluted rabbit serum, always using as a control, 1 c.c. of salt solution with ½ c.c. of diluted culture and ½ c.c. diluted rabbit serum. His control he plated from immediately, then put all the tubes at incubator temperature for two to four hours. At the end of that time he plated them all in agar, incubated the plates and counted after twelve to eighteen hours. All of this process Stern says can be done in one-half hour for one serum and the time reduced when more than one serum were tested at the same time. In testing *27* typhoid sera and *7* normal sera in the Board of Health Laboratory, Dr. Goodwin had found the test more difficult than the general tone of Stern's article suggested. The rabbit serum differed so much in its immune body content that sometimes it was necessary to test several rabbits before finding one that would not destroy too large a proportion of the bacilli added. After several failures a Mount Sinai Hospital culture and a New York Hospital culture which seemed to be suitably resistant were found. Among the few cases examined no serum was found of such unusual strength as Stern's, which showed the decided reaction in a 1-4,000,000 dilution. None of the sera showed a reaction above 1-200,000; the highest dilution of a normal serum showing a reaction was 1-100. The earliest serum tested was from a ten day typhoid. A 1-500 dilution gave a plate of 8,000 colonies while the normal serum control contained 100,000 in the same dilution. The bactericidal power was found in much higher dilutions than the agglutinating. It took a much longer time to make the test, about two hours for a single serum and an hour for each additional one. The test seemed too complicated for routine laboratory work but of undoubted value in obscure cases where a diagnosis could not be made. The full value of the results cannot be estimated until work has been done on obscure cases of colon and dysentery infection where one might be misled by the large amount of common immune body present.

Dr. W. H. Park, in the discussion, said that during the course of the work experience had been gained which seemed to him of some interest. The first results had been very disappointing. After reading Stern's first article the technic seemed to be very simple. Specimens of serum were taken from six typhoid cases and from four normal persons so as to get a rough estimate of the value of the test. The making of the tests took a full day. On the next morning it was found that the culture used was so sensitive that the rabbit blood alone had killed all the bacilli so that the plates were sterile. For a moment it seemed as though the test were a failure, but Dr. Steinhardt suggested that some other culture might show just sufficient resistance to resist the rabbit blood but be killed by the addition of a typhoid patient's serum. The Mount Sinai culture obtained from Dr. Libman was then tried and found to be of about the right resistance. A second point of interest was that during the course of four or five months this culture has shown no change and probably would never become as sensitive as the one first tried. Dr. Park thought that even in his second paper Stern made the test appear much simpler than it really was. However, with suitable cultures and great patience Dr. Goodwin had obtained results which, though not as definite as Stern's, indicated that the test might be of value in doubtful cases. Only a large number of tests could establish this. Dr. Goodwin would be very glad if anyone who had a doubtful case would send her some serum for further experimentation.

Concerning the Causes of Gall-Stones.—Dr. Edwin Beer read a paper on the causes of gall-stones, his purpose being (1) to indicate a new method of investigating the problem, and to show the results this new method had borne in his hands, and (*a*) to interest the members of the Society, so that more cases might be brought together and studied. A review of the work done by Naunyn and his pupils, which work has given rise to our present conception of the etiology of gall-stones, and of the confirming experiments of Mignot and Miyake, was briefly given. No one seemed to have tried to follow and analyze the genesis of stones in the human body. Dr. Beer's attention had been turned to the liver and its ducts. Here obstructions and inflammatory conditions are found which parallel the conditions which Naunyn thought underlay the process of gall-stone production. Eleven cases were collected at autopsy in which there had been a common duct obstruction for more than four or five weeks and in which a more or less severe inflammation of the extra and intrahepatic ducts had developed. In seven cases the common duct was obstructed by calculi, in four by tumors of various kinds. In the first series of four cases, as a result of the conditions of the experiments, stones formed in the liver ducts. In the second series of four cases, though apparently the same conditions were present, no stones developed, though stagnation of bile and inflammation of the mucous membrane of the bile passages were present. The absolute regularity of the results seemed to preclude chance, and though the series of cases was small, seemed to point to a new factor in the production of gall-stones. If we were to call this new factor an altered liver metabolism or a diathesis we could understand why stones developed in the liver ducts when stagnation and infection developed in cholelithiasis cases, they having the predisposition as evidenced by the older stones, and why they would not develop under similar conditions where no liver disturbance and no cholelithiasis were present. Dr. Beer's conclusions were as follows: (*a*) Naunyn's factors—stagnation of bile plus inflammation of the bile passage mucosa—do not seem to be sufficient by themselves to lead to gall-stone formation even though the time allowed for the working of the causes be adequate. (*b*) The first series of cases show that these two factors lead to stone formation in patients who previously had gall-stones. In these series we have the first real evidence of the factors underlying gall-stone production and the causes of cholelithiasis.

Dr. Otto H. Schultze, in the discussion, said that among the cases which came to the Morgue, in which gall-stones were rather common, the same thing had been shown as mentioned by Dr. Beer; namely, that in some cases of compression of the common bile duct where inflammation had taken place and every opportunity had been given to the factors mentioned by Naunyn, no gall-stones were found, and in some cases where gall-stones were found the common bile duct and the ducts throughout the liver seemed to be quite normal. When stones were present in the bladder it seemed to him as likely that the stones caused the inflammation as that the inflammation was a factor in producing the stones.

Dr. Charles Norris said that so far as his experience went he quite agreed with Dr. Schultze. The gall-bladder was frequently found to contain stones when there were no signs of previous inflammation. In old cases there was often a thickening of the wall of the gall-bladder.

Dr. E. Libman said that he could not speak positively concerning his cases without consulting the records, but

his general impression was that the material ran as Dr. Beer had said. He did not remember any case where the stone had formed after compression of the ducts by tumors. He did remember at least one case in which there was occlusion of the common-duct by gall-stones with stones in the hepatic duct.

SOCIETY OF THE ALUMNI OF CITY HOSPITAL.

The 120th Stated Meeting, held February 8, 1905.

The President, Joseph F. Terriberry, M.D., in the Chair.

Pityriasis Rosae.—Dr. George T. Jackson presented this case, the patient being a man twenty-five years of age. After briefly stating the history of the case and making a few general remarks on the nature of the disease, Dr. Jackson emphasied the importance of not employing too much local treatment in these cases but rather of relying largely upon internal alteratives. There was no discussion.

Vesical Calculus.—Dr. W. S. Reynolds reported a case of vesical calculus in a male child, and exhibited an X-ray plate showing the calculus *in situ* before it had been removed. He also passed around the stone, which is about the size and shape of a pigeon's egg. The speaker directed special attention to the interesting fact that the calculus had been distinctly palpable on rectal examination and that the sensation imparted to the examining finger was very similar to that in cases of prostatic enlargement in the adult.

Appendicitis and Abscess of the Liver.—Dr. Adolph Rupp said that liver abscesses occurring in connection with acute appendicitis are not often mentioned in discussions on appendicitis. This is not to be wondered at when more than 1,000 successive cases may be operated by a surgeon without meeting a case of liver abscess associated with appendicitis disease. Happily liver abscesses occurring in connection with appendicitis are rare; but their rarity makes them none the less interesting and important pathologically or clinically.

Case.—S. I., merchant, aged forty-eight years; was seen at his office at 2 P.M., October 8, 1904, giving a history of indigestion. No fever, no acceleration of pulse, only vague intermittent colicky pains, anywhere and everywhere over the abdomen. Now and then nausea. Complained of lumbago and malaise. Was seen again at 6 P.M., because the codeine-bismuth-caroid mixture had given no relief. At this time no fever, and no change since two o'clock. Gave a quarter of a gr. of morphine hypodermically, and continued the above mentioned mixture. Diet only water. The sclera were slightly jaundiced, as well as the skin. October 9, 9 A.M., patient subjectively better and comfortable; but now a localized intumescence in the appendicular region could be made out, beside McBurney's point. Temperature 101° F. Diagnosis of appendicitis made, and surgical treatment advised. Patient entered Dr. Wm. T. Bull's Hospital, and was operated at 8 P.M. by Drs. Poole and Walker, with attention to all necessary details, and after a manner that left nothing to be otherwise desired.

The surgical history of this case lasted about one month, October 9 to November 10, when the patient died in collapse. In looking over the tracing of the temperature chart, the run of the fever can be divided into five unequal sections, each succeeding section being an aggravation of the preceding one; and it is quite natural to assume that some special pathological cause intervened to produce the change, in the course of the general pyemic infection.

Post-mortem examination revealed no general peritonitis; hepatitis, and two large abscesses, one the size of a large fist, the other about half that size, in the middle portion of the right lobe of the liver, rather anteriorily and to the left. Liver generally infiltrated with pus or small abscesses. The right lung was adherent to the ribs and diaphragm, solified, and the seat of septic pneumonia. Kidneys normal. Appendicular stump normal.

From the facts developed in the history of this case, Dr. A. Rupp believes that the appendicular disease was only incidental, and that no "inflammatory product" originating in the appendicitis "caused" the liver abscesses; but that the same original infecting cause or causes which gave rise to the early mental depression which lasted throughout, and became aggravated as the disease advanced, gave rise simultaneously, or in rapid succession, to the appendicitis, engendered the rapid formation of pus, which in turn infected the wound, and developed the liver abscess and the septic pneumonia. The septic developments were rapid. The temperature chart shows that when the outflow of pus was facilitated the temperature rise was lessened; but when the strength of the patient was rapidly declining, and conditions unavoidably became such that the escape of pus was rendered impossible, and became stored, as in the lung, the temperature rise and fall became abrupt and intermitted with very brief intermissions.

Therapy.—In this case the surgical operation was necessarily only an expectant remedy. It removed only one infected organ, and that organ was not the source of the subsequent complications. Dr. Wm. T. Bull had suggested the use of antistreptococcus serum. But, from his experience, he said he was "afraid" of it; however, he left its application for me to decide. I decided negatively, because even if a remedial serum were at hand, it could have been of no curative value in this case, and the sources of the toxic and anatomo-pathological causes could not have been reached by it. All other symptoms were treated as they arose. Morphine alleviated the severity of the chills, at least in so far as the feelings of the patient were concerned. Lavage of the stomach gave so much comfort, the patient asked for the procedure.

Dr. E. H. Poole confirmed Dr. Rupp's report on the history of the operation.

Dr. Brooks Wells considered it a very interesting case and remarked that he had observed similar cases in which the clinical picture simulated acute yellow atrophy of the liver, and in which the pathological examination showed degeneration of the liver following a septic pyelophlebitis.

Dr. C. S. Cole urged the importance of early operation and recited the history of a similar case observed during his service as house surgeon at the City Hospital, in which a diagnosis was not made till the time of autopsy. He expressed the opinion that exploratory puncture in these cases was usually disappointing and that blood counts unless showing a leucocyte count of at least 20,000 were not to be relied upon.

Dr. Morris Manges remarked that Dr. Rupp's case was certainly an interesting one, but thought that liver complications with appendicitis were not by any means so rare, referring to reports of Lindhart and the reports of the Mount Sinai and Presbyterian hospitals. Two forms of cases were met with: those in which there occurred mesenteric thrombosis and pyelophlebitis and those in which there occurred liver abscesses following general septic pyemia. He recited the history of a case observed by himself in which death had occurred

at the fourth day in spite of early operation. He believed that exploratory puncture was of great value and that leucocyte count above 15,000 was a very important sign.

Dr. Rupp, in closing the discussion, maintained that Dr. Manges' assumption that his case was similar to those reported elsewhere could not be based upon observed facts, and was of the opinion that Dr. Manges' views would coincide with his if he had seen the case himself.

PHILADELPHIA COUNTY MEDICAL SOCIETY.

Stated Meeting, held March 8, 1905.

Dr. Howard M. Fussell in the Chair.

New Apparatus.—Dr. H. E. Wetherill called attento his hemoglobin scale and color-test book for the better determination of hemoglobin moisture, perspiration, urine and the color of the feces. He also showed a new hematokrit which measures in a two-way motion instead of one, and gives 25,000 revolutions per minute.

Fracture of the Cervical Spine.—Dr. Charles W. Burr exhibited a patient with this affection. The patient was a white man, fifty-six years of age, who had fallen in November, 1898, from a cart, striking his neck and shoulders. He was unconscious for a time and was taken to a hospital. At first he had severe pain in the neck, shoulders and both arms. He could not move the arms and could not walk. He stated that he could move the legs some. About six months later he was brought to the Philadelphia Hospital. At that time he could walk fairly well with short, stiff steps. He held his neck very stiffly, and movements in the arms were limited by rigidity and by weakness. The grip was very weak. The deep reflexes were increased. The skiagraph reveals a fracture of the body of the fifth cervical vertebra with fracture of the lamina. At the present time he walks well. His head is held stiffly. He can move it a little but with pain. There is considerable movement of the arms with rigidity. The knee-jerks are a little increased. The plantar jerks are normal. There is a little muscular wasting in the deltoids but none elsewhere. There is some spasmodic retention of urine.

Dr. M. K. Kassabian gave some statistics of fractures, showing that a very small percentage represent those of the spine. In his own 1,500 cases of fracture there was only four per cent. of fracture of the spine.

Dr. Morris Booth Miller stated that in such a fracture operation should only be undertaken when there is pressure upon the cord or from bone. Anchylosis gives a fair chance of slow absorption of hemorrhage and gradual restoration of function. To secure that no device is better than a modified jurymast.

How Can the Physician Profit by Preventive Medicine?—Dr. J. Madison Taylor, in this paper, presented evidence to show that it is necessary that preventive medicine shall be exhibited to the profession as a means of advantage to themselves as well as to the community. He submits that the relationship of the physician to the patient is on the wrong basis; that the practitioner should be given free opportunity to inspect the members of a household at regular periods or at will, and not called only when there is illness; that disease is now being studied from the standpoint of economics, hence prevention is to be welcomed as a source of general wealth; that legislatures can be made more effective if physicians will do their part toward the prevention or limitation of preventable disease; that physicians should more clearly point out the ways to reform and educate the public; that they should accept the authority of the health boards more cordially and work with them to accomplish results. He recommends that physicians should adopt a different fee system, and states that it is a false position for the physician to earn no fee, except by being invited to meet exigencies; better, he says to adopt the plan long since found necessary by lawyers, of demanding a retaining fee or yearly stipend of the householder, thus giving them access to the house to rectify constitutional peculiarities and save from peril. He alluded to the neglected duty of the physician of discouraging the use of many medicines, bitters, tonics, cough medicines and the like, whose chief attractiveness is the contained alcohol or narcotics.

The Osmic Acid Treatment of Tic Douloureux.—Dr. W. Wayne Babcock reported a case of trifacial neuralgia of extreme severity. The conditions had persisted for thirty-five years, despite eight operations, including two attempts to remove the Gasserian ganglion, and the excessive use of drugs had at one time led to temporary insanity. About nine months ago a two per cent. solution of osmic acid, under cocaine anesthesia, had been injected into the inferior dental nerves. More recently the infra-orbital, palatine, and supra-orbital nerves were injected. The patient has gained thirty-five pounds, and his physical condition is revolutionized. The case was cited to indicate that osmic acid injection may be of value in cases of the most persistent and pronounced type of tic douloureux. No major operation, he stated, is warranted in the treatment of trifacial neuralgia until the futility of osmic acid injections into the peripheral nerve trunks has been proved.

Dr. L. J. Hammond called attention to the relations of the nerve fibers comprising the trifacial, and thought that absolute cure of these pains should not be expected until not only the trifacial but the different branches of the fifth nerve were dealt with.

The Problem of the Treatment of Laryngeal Tuberculosis.—Dr. W. G. Harland read this paper, which gave briefly what is known about the prevalence and natural history of tuberculosis of the larynx. The paper states that the vocal cords, interarytenoid fold and arytenoids are parts most often affected, involvement of epiglottis or epiglottic folds being more serious. Most forms of the disease pursue a harmless chronic course, edema and deep ulceration, however, are dangerous. The laryngeal lesion Dr. Harlan considers probably does little harm, except when it causes dyspnea, pain or difficulty in swallowing; it forms an index of general health and resistive power. Treatment is directed toward lessening irritation in the upper air tract, toward healing ulcerations, and toward building up general health. The X-ray he has found to be of use in some cases. He thinks that serum therapy promises much.

Dr. W. Wayne Babcock referred to a case of laryngeal tuberculosis seen within the last four or five months. On the day he first saw the patient she had received an intralaryngeal application. She had dyspnea and became unconscious. A rapid tracheotomy was done, after which she improved and gained in weight. The tube was removed. Further applications were not made by the laryngologist for fear of the edema, but after two or three months the edema again developed. A second tracheotomy was done and since that time the patient has worn a tube continuously. Her voice is better and she has gained in weight.

Dr. Ross Skillern thought that if the laryngologist gave the greatest possible amount of relief with the

smallest amount of actual manipulation of the diseased structures he is doing good work.

Dr. L. J. Hammond has operated on eight cases of laryngeal phthisis in the past sixteen or eighteen months with good results. He thinks the operative procedure is based upon rational principles, in that in this condition, as in a tuberculous condition of the joints, the best treatment is to put the parts to rest.

Dr. George E. Pfahler mentioned a case referred to him by Dr. Cleveland in which he is making the X-ray applications externally, using the tube of high vacuum and at a distance of from 15 to 20 inches. Distinct improvement has been noted in the case by Dr. Cleveland.

NEW YORK ACADEMY OF MEDICINE.

SECTION ON ORTHOPEDIC SURGERY.

Regular Meeting, held March 17, 1905.

The President, Homer Gibney, M.D., in the Chair.

Equinovalgus Deformity.—Dr. Royal Whitman presented the following cases: The first patient, a girl eleven years of age, illustrated the practical cure of equinovalgus deformity, caused by paralysis of the tibialis anticus muscle. This operation, which he had described before on several occasions, was conducted as follows: The tendon of the longus hallucis was divided, drawn through a hole bored in the navicular, looped over and sewed to itself and to the shortened tendon of the tibialis anticus, at a sufficient tension to hold the foot in slight dorsal flexion. Arthrodesis was then made between the head of the astragalus and the navicular and the two bones were sewed to one another with strong silk. The foot was then placed in an attitude of moderate varus and a plaster bandage applied. Soon after, the patient was encouraged to walk about, the plaster apparatus being retained for about three months in order to impress the new attitude upon the foot. This operation was, as in this instance, as a rule so effective that no apparatus was required. It might be noted that the accessory tendon of the great toe was quite sufficient to hold it in proper position.

Clubfoot.—*Case II.*—This patient, a boy six years of age, illustrated the effect of the Phelps' open incision in correcting clubfoot. He had performed a number of these operations recently in a type of cases familiar in hospital practice in which, because of neglect of after operation, a certain degree of varus persisted. He thought no operation was as effective as this in assuring a permanent result in cases of this class.

Case III.—This patient, a girl sixteen years of age, came to the hospital from Porto Rico. She presented a congenital clubfoot that had never been treated and yet the deformity had been completely overcorrected by forcible manipulation without dividing a tendon even. The case was presented to contrast it with the preceding, as an illustration of the fact that the resistance of congenital deformities of this class by no means corresponds to the age of the patient. It was his custom in the treatment of clubfoot in youth, and adult age, whenever possible, to divide the operative treatment into several sittings, forcible correction always preceding more radical procedures. In this case the correction was easily accomplished in three operations.

Excision of the Ankle for Tuberculous Disease.—*Case IV.*—The patient, a woman twenty-five years of age, was admitted to the Hospital for Ruptured and Crippled last summer. She presented advanced tuberculous disease of the ankle of three years' duration. On investigation the disease was apparently confined to the astragalo-tibial joint. The astragalus was removed and in order to eradicate the disease of the tibia it was necessary to open its medullary cavity. It would be noted that the result was not only a cure of the disease, but free motion had been restored. The ankle joint was most favorably constructed for radical treatment since, as in this instance one might not only remove the disease but restore function. Another point was of interest in view of the question of plugging cavities in bone with iodoform filling, that although this might have been tolerated the patient's condition could hardly have been improved by such treatment.

Tendon Transplantation for Spastic Hemiplegia.—*Case V.*—This patient, a girl eight years of age, presented on admission to the hospital, the ordinary equinovarus deformity accompanying hemiplegia. The contractions having been overcome, the tendon of the tibialis anticus with the lower portion of the muscular substance was divided into equal parts, and the outer half was attached to the cuboid bone. The foot was fixed in the overcorrected position by a plaster of paris bandage for several months and the original deformity appears to have been overcome. In cases of this class it must be borne in mind that the operation simply restores in some degree the balance of the foot, but that cure can only be assured by constant supervision.

Torticollis.—Dr. Homer Gibney showed this patient. The boy was admitted last November, Dr. Gibney's service. He held his head inclined to the right, chin pointing over right shoulder—a compensating lateral dorsal curvature. Tendons of the sternocleidomastoid were divided subcutaneously, after which a jacket and jury mast were applied. The jacket was continued until within the past week when it was removed. There is no limitation of motion, no scar, spine quite straight and deformity entirely overcome.

Injury of the Cervical Vertebrae, with Symptoms of Osteitis.—Dr. Myers presented this case. Probably fracture of the second cervical vertebra. Cured with perfect motion in five and a half months. M. P., boy, four years of age. October 1, 1904, fell out of bed, turning a somersault. His two brothers fell on his neck. When his mother picked him up he seemed to have no power in the muscles of his neck, his head falling from side to side. He was put to bed; no other treatment. October 22, 1904, first seen by Dr. Myers at St. Luke's Hospital. Head was held a little flexed, not rotated to either side and all motions of neck, especially rotation, were markedly restricted by reflex muscular spasm. Great tenderness over second cervical vertebra. Reflexes increased, but no disturbance of sensation below the point of injury. Temperature 98.8° F.; respiration, 28; pulse, 86. He was put on a Bradford frame, with his head tied down. November 15, motion increasing somewhat in all directions. Second vertical vertebra still tender. Skiagraph shows no dislocation. Reflexes normal. November 21, retention head brace applied. Bradford frame continued. January 28, 1905, no vertebral spines especially prominent. Rotation to right and left 60 degrees. Inclination to right and left 60 degrees. Flexion and extension but slightly restricted now. No pain. February 2, brace removed and five days later he was allowed up. February 21, no deformity. Motions free. No pain or spasm. Discharged cured.

Osteoperiarthritis.—Dr. Carlton Wallace showed a child nine years of age, a typical case of hereditary specific disease. It is interesting because one sees few of these in orthopedic hospitals and clinics. She has

osteoperiarthritis of both knees, ostitis of both tibiæ and two or three ulcerations. She was sent to Sea Breeze Hospital, an experimental institution for the sea air treatment of surgical tuberculosis, last June. Was seen in November and it was diagnosed then as specific. There was much tenderness then over both tibiæ, but this has disappeared under potassium iodide treatment. She cannot stand erect and the knees are held at an angle of 170 degrees, but the joints are not especially painful. Her general condition has much improved and she has gained eight pounds in weight. She was discharged in March, there being no evidence of tuberculosis.

Equinovarus.—Dr. Hibbs presented the following cases: J. K., boy, aged three years, entered the New York Orthopedic Hospital June 21, 1904, with both feet in a position of marked equinovarus. The deformities of his feet were corrected by manipulation under ether at several different times. After this, however, there remained such an amount of twisting of the tibiæ that it was ncessary to do an osteotomy on both. This operation was done January 13, at the junction of the middle and lower third. It was necessary to rotate the lower fragment with the foot outward, about 60 degrees to correct the deformity. There was little difficulty in the treatment of the deformity of the feet, but this condition of twisting of the tibia sometimes seen in such cases, cannot be overcome except by osteotomy.

K. G., girl, aged eleven years, entered ward June 17, 1904, with feet in a position of equinovarus, slight amount of internal rotation, no twisting of tibiæ. Walked on dorsal edge and outer aspect of foot, where there was a great callous. On July 11, July 20 and August 1, stretched and put up in plaster. August 13, tendo Achillis lengthened 1½ inches in both legs. Feet placed at 90 degrees in plaster.

Boy, aged three years, entered ward October 19, 1903, with a paralysis of the small finger, the result of severing a branch of the ulnar nerve. October 23, the branch of the ulnar nerve supplying the little finger was sutured and the hand put up in plaster. November 14, dressings removed, wound healed. Nerve showed signs of the beginning to revive. December 4, no evidence that the function of the nerve had been restored as there was still loss of power in the flexors of the small finger. Discharged. This boy had not been seen by Dr. Hibbs again until March 16, when it was observed that there was power in that tendon. The boy does not use the finger quite properly yet, but neurologists who have seen the case say he is steadily gaining ground.

NEW YORK OBSTETRICAL SOCIETY.

Stated Meeting, held March 14, 1905.

The President, J. Riddle Goffe, M.D., in the Chair.

Tubo-Ovarian Abscess. Five Years Subsequent to Vaginal Salpingo-Oophorectomy for Pyosalpinx of Other Side.—Dr. Le Roy Broun presented a specimen of tubo-ovarian abscess with uterus which he had recently removed for acute symptoms referred to the right iliac region. The abscess was first emptied through a vaginal incision, and then the sac which communicated low down with the large intestine was removed through the abdomen. On account of the desperate condition of the patient, the opening in the intestine was treated extraperitoneally by gauze drainage into the vagina. The recovery has been complete except for the presence of a small fistula. This experience, he says, will cause him to hesitate about leaving the other tube if one is the seat of purulent salpingitis.

Double Tubo-Ovarian Abscess. Complete Hysterectomy.—Dr. Le Roy Broun presented the uterus and adnexa he had removed from a patient, thirty-three years of age, who had been sick for a week with symptoms of acute salpingitis, following by one month symptoms of an acute urethritis and a profuse vaginal discharge. Recovery was uninterrupted.

Calcareous Degeneration of a Fibromyoma.—Dr. Le Roy Broun presented this specimen that he had removed from a paranoiac, who had been delivered eight years previously of stillborn child. She had believed the child was alive, but had been kept by the physician for experimental purposes. She had been very anxious to have children, and considered herself to be again pregnant.

Fibro-Sarcoma of the Ovary.—Dr. Malcolm McLean presented a large solid tumor of the right ovary removed from a patient twenty-five years of age, who had first presented herself about eight months prior to the time of its removal. The symptoms had been pain in the lower abdomen, the presence of a rapidly growing tumor and a diminution in the amount of the menstruation. The examination gave the physical signs of a subperitoneal fibromyoma. The peritoneal cavity contained about two quarts of yellow viscid fluid, and the thickened parietal peritoneum showed numerous small tubercles. Recovery had been complete. The pathological report showed it to be a round-celled sarcoma with an abundance of fibrous tissue.

Teratoma.—Dr. Malcolm McLean presented the photograph of a newborn child that presented a teratomatous mass springing from the pelvis and lower fourth of the child's body which was considerably larger in diameter than the head of the child. The pregnancy was marked by an unusual amount of abdominal soreness and tenderness. The labor progressed favorably until the presenting occiput reached the pelvic floor. A little extra effort succeeded in the delivering of the head, but further progress and delivery was accomplished only after considerable manipulation. After the shoulders were delivered it was evident that there was something detaining the rest of the fetus and abdominal palpation showed the uterus contained a form larger than the body of a normal child.

Sudden Elevation of Temperature During Labor.—Dr. H. C. Coe related the history of a patient, who had severe rigor with rise of temperature of 104° F.; at the termination of the first stage of a labor that had been induced two weeks early by means of cervical gauze packing because of a low output of urea and symptoms of a threatening toxemia. Temperature declined to 101° F. at the completion of the labor and her subsequent convalescence was uneventful except for a sharp attack of sciatica. During the fourth week another rise of temperature occurred for two days, which was thought to be due to grippe. The urine, which had returned to normal, again showed a low urea output after a more liberal diet, but without any evidence of renal trouble. Dr. Coe asked for the probable cause of the febrile movement during labor, and the significance of the low urea output in pregnant women, especially in cases in which there are no toxic symptoms. He asked if this alone is indication for premature interruption of the pregnancy.

Dr. Cragin said small amounts of urea are occasionally seen without symptoms, and mentioned two cases of his own, in which only 75 grains were passed a day, but both went to full term without symptoms. A milk diet and a large amount of fluid will make the urea low, and it is found that normal pregnant women do not pass as much urea as was formerly supposed. Among 100 cases ex-

amined at the Sloane Maternity Hospital during the last month of pregnancy, the largest amount executed was 300 grains a day, and any amount between 250 and 300 seemed to be normal. A woman passing 50 or 75 grains a day without toxemic symptoms may be allowed to go to full term, but under careful observation.

Dr. E. H. Grandin stated that it is not so much the amount of urea but the amount of urine passed in twenty-four hours, taking into account, of course, the diet.

Dr. W. S. Stone referred to a case of severe toxemia he had recently seen, in which the urea output was twice the normal amount.

The Prophylaxis and Treatment of Pyosalpinx.—Dr. James N. West from an analysis of the reports of many thousands of pathological examinations of tubal contents has concluded that 62½ per cent. are caused by gonorrhea; about 16 per cent. from the results of incomplete abortion: the remainder of uncertain origin; a few arising from pathogenic organisms conveyed to the tubes from other parts of the body, as tubercle bacilli, colon bacilli, *Bacilli lanceolatus*. Seventy-eight per cent. then of the cases of pyosalpinx are possibly preventable. From his experience with washing out the uterus of two freshly infected cases through a cervical speculum with an alkaline solution followed by 1/240 solution of silver nitrate, he is encouraged to try the same treatment again. Pyosalpinx from infection following an incomplete abortion, he believes, can be entirely prevented by operating upon every case of inevitable abortion under anesthesia and perfect aseptic technic. His treatment of pyosalpinx would depend upon the stage to which the disease has advanced. In an acute and virulent stage, he would advise rest in bed, suitable dietetic and hygienic measures, icebag to the abdomen and hot vaginal and rectal irrigations, alternately every four hours. As soon as the acute symptoms have subsided, he would operate, although procrastination has the advantage of meeting less virulent micro-organisms. In the more advanced cases, in which the walls of the tubes and ovaries have coalesced into one large abscess sac with several communicating chambers, lying in the cul-de-sac, he would perform a vaginal incision, and after washing out the cavity with two per cent carbolic solution through a return catheter, a drainage tube is inserted and surrounded lightly with iodoform gauze. The tube is left in for five weeks. His general plan of procedure is to remove the tubes, leaving one or both ovaries, if possible. If the uterus seems to be necrotic, the seat of an abscess, or very badly injured in the course of the operation, it also is removed. The vaginal incision is first made if the cul-de-sac is bulging with a large abscess. If not the abdominal opening is made at once. Vaginal drainage is always used if there has been great traumatism, if pus has been spilled, and if there is excessive oozing from ruptured adhesions. Injury to the intestines and complications with the appendix are so frequent that in all cases where the tubes are to be removed, he thinks the operation should be done through an abdominal incision. Of 13 of his own cases during the past year, eight had vaginal drainage; in two the ovaries and uterus were also removed. All cases recovered. His conclusions are: (1) That all cases of abortion should be operated upon; (2) that gonorrheal invasions should be fought from their start to their finish; (3) that the greatest possible aseptic precautions should be used whenever the uterus is entered by fingers or instruments; (4) that all cases of pyosalpinx should be operated upon; (5) that certain cases may be relieved by a proper form of drainage; (6) that an operator should not enter upon a case with a fixed determination to do a radical operation; (7) that the vaginal route is unsuitable for a radical operation; (8) that vaginal gauze drainage is the best form, and has its definite indications and use.

Dr. E. H. Grandin, in the discussion, considered prophylaxis is the most important part of the subject, and would consist not only in proper hygiene on the part of the woman, and instruction to the physician and nurse, but also in teaching both men and women the dangers of the gonorrheal infection. The treatment of pyosalpinx should be surgical, operating in the interval whenever possible. If a swollen tube approaches the vaginal vault and is surrounded by a plastic exudate, the pus may be best evacuated through a large vaginal incision. He only uses gauze drainage. In other cases he prefers the abdominal route because the eye assists the finger. In gonorrheal infection he would remove both adnexa and also do a supravaginal hysterectomy.

Dr. R. H. Wylie was surprised to hear that gonorrhea is the cause of such large proportion of cases of pyosalpinx, as he had been led to believe that incomplete abortion was a more common cause than is generally supposed. The operative procedures advocated in the paper were those he had been using for a long time, except that he does not leave in the tube for such a long time. The abdominal route, he considers, is best for conservative work, as in young women he prefers to leave the other tube, although in chronic cases with much destruction of tissue, he would remove it but leave the ovary. He does not believe in waiting for the interval to operate, because the cases will recover if done in the acute stage, provided the work is done cleanly and the disc and tissue is removed.

Dr. Le Roy Broun considers the use of gauze in draining tubo-ovarian abscesses is objectionable, because of the amount of pain it causes in its removal and renewal. He prefers to use two tubes, sewed together, one small tube with only one or two fenestra at its upper end, and a larger one with fenestra along its entire length.

Dr. Ralph Waldo said that of 25 patients operated upon at Lebanon Hospital since June 1, 1904, for pyosalpinx, there were only four who had a history of gonorrheal infection. The others gave histories of septic endometritis, in most instances the result of an induced abortion. He ordinarily operates early in the disease through an abdominal incision, and if there is no reason to believe that a collection of serum or blood will result, the abdominal wound is tightly closed. Otherwise he usually drains with gauze through the abdominal incision.

Dr. H. C. Coe thought some confusion had been introduced into the discussion by considering acute salpingitis in the same category with pyosalpinx. In acute cases his experience had not been favorable to operation, and he did not think operations could be done at that time with impunity. He was accustomed to teach that the classical descriptions of pyosalpinx and the conditions upon which a diagnosis is based, are more often absent than present.

The placing of a tube within ordinary abscess cavity, he thought would not assure drainage of the origin of the purulent focus, and leaving a tube for such a long time would be apt to form a permanent fistulous tract.

Dr. J. Riddle Goffe spoke of the difficulty in the scientific determination of when a man is cured of gonorrhea so that he may safely marry, and related the history of two patients who had contracted gonorrhea from their husbands after they had been pronounced cured by eminent genito-urinary surgeons.

Dr. A. B. Tucker reported a patient in which both tubes and one ovary were removed for pyosalpinx. She subsequently became pregnant, and was delivered of a

living child. In the light of such an experience he believed in saving all the structures possible, as even the stumps of excised tubes may become patulous and allow impregnation to occur.

Dr. James N. West, in closing the discussion, said that he had found that gauze drainage, which was all removed by the sixth day, allowed the abscess to reform, and on this account he had introduced the rubber tube. He does not believe in removing both tubes if one is apparently healthy. The statistics in regard to the relative frequency of gonorrhea and abortion as a cause of pyosalpinx, he thought, showed that gonorrhea is less prevalent in American than in France and Germany.

CHICAGO LARYNGOLOGICAL AND OTOLOGICAL SOCIETY.

Stated Meeting, held March 7, 1905.

The President, William L. Ballenger, M.D., in the Chair.

Specimens of Cartilaginous Septum.—Dr. Wm. L. Ballenger exhibited specimens of cartilaginous septa which were removed with a knife he had recently devised. They were exhibited to show the shape in which they exist after removal. The method of removal by his knife does not in any way destroy the specimen, but preserves it in its entirety for study. The advantages of the knife, which he described, are that it shortens the operation, preserves the specimen, and obviates the mutilation that would be caused with punch forceps.

Stenosis of the Nares.—Dr. F. G. Stubbs described a plastic operation for stenosis of the nares. He also described an interesting case of tuberculosis of the larynx.

Some of the Newer Remedies.—Dr. Joseph C. Beck said he had looked up the literature on newer remedies, and was able to collect 11,064 such compounds as are recognized and used by the medical profession. The important question is to decide the value of these preparations.

Anesthesin.—In a case of painful ulcer of the septum, a local application of five per cent. ointment of this agent, twice daily, relieved the condition immediately. In a case of painful, specific ulceration of the tongue, the use of anesthesin bon bons was followed invariably by relief, so that the patient could eat a meal with comfort, but without them it was impossible. One case of earache, one of acute pharyngitis, after painful deglutition, one of hypersensitive rhinitis, and one of eczema, with intense itching of the external auditory canal, were relieved by anesthesin.

Argyrol.—He has been unable to see any appreciable effect of this remedy in the routine treatment of nasopharyngeal affections, and now resorts to the old, reliable solutions of nitrate of silver.

Adrenalin.—Much has been said against the use of this drug, owing to the secondary bleeding in operations. He has had his share of that trouble, still he would not do without the use of it. He referred to the peculiar action that this drug has had on two of his cases, namely, producing shock. In both there was no cocaine used, but symptoms very much like it appeared. He said others have had similar experiences from the use of adrenalin, and it is thought to be due to the ischemia of the nasal mucous membrane, with extension into the inner cranial cavity, causing marked ischemia of the meninges, and eventually the brain. This is the only explantion he has been able to find in literature. As to adrenalin itself, he prefers it to any preparation of the suprarenal extract, having tried the adrenalin adrin, adnephrin and epinephrin.

Aspirin.—He has found this remedy *par excellent* in all cases of grippe-like effects, associated principally with ear, nose and throat diseases. He has obtained immediate relief in doses of five or six grains. In several cases of acute frontal sinusitis, with marked pain, it acted admirably, though in somewhat larger doses—5 to 20 grains, three times per day.

Brometone.—The bromides are used by him considerably in ear cases in which tinnitus aurium is such an annoying symptom. These salts are not only very unpleasant to take, but disturb the stomach and produce bromism. His substitute for the salts or potash of soda or potash is brometone, in doses of 15 grains, three times a day, and he has found it to be satisfactory.

Camphorozol.—After more than two years' experience with this remedy in chronic suppurative ear diseases he says unhesitatingly that it is the best cleanser and deodorizer he has found.

Iodo-Nucleoids.—He has been able to come to some conclusions as to the value of this iodide preparation in comparison with the iodide of soda or potash, salts or iodipin. When this preparation was first put upon the market, he was told that it was superior to the other iodide preparations, in that the same results could be obtained in very much smaller doses without the production of iodism, disturbance of the stomach, acne, etc. He immediately selected three cases, and found it wanting, as he also found later, while he was using small doses, and when he reverted to the use of iodopin he was very much relieved at the immediate change of the condition of the patient. It soon followed that the small dose of iodo-nucleoids had to be increased the same as one does with the other iodides, and when he did so the change became apparent, that is, better results were obtained. After increasing the dosage of iodo-nucleoids he obtained results equally as good as when he used the old, reliable remedies, without any gastric disturbance or other symptoms of iodism, which is a distinct advantage.

Eucain Lactate.—In the few cases in which he has tried the 15 per cent. solution of eucain lactate applied to the nasal mucous membrane for any steady effort for operative procedures, he has found it wanting in every case. He was compelled to reanesthetize with cocaine before he could proceed with the operation.

Pollantine.—He has treated 12 cases of hay fever the past season with pollantine, but when the season was over he was very much disappointed as to the results. Only one case was completely relieved. Dr. Dunbar, on a recent visit to Chicago, stated that the antitoxin that was put on the market would act as a specific in those cases in which hay fever was due to the pollen of rye, which is frequently the cause of hay fever in Germany, and in the hay fever due to ragweed or goldenrod. The patient Dr. Beck speaks of as having been cured is a buyer of wheat and rye, and examines a great deal of grain. Almost all the hay fever cases stated that they did not have their hay fever as hard as usual, and universally declared that their rye symptoms were much lighter.

Thiosinamin.—Two years ago he read a paper before the Academy of Ophthalmology and Oto-Laryngology on the use of this drug in chronic otitis media, with a clinical report of 14 cases. He wished to supplement that report by 200 more cases with the observation that the drug acts in almost every

case in producing positive general symptoms, such as great fatigue, often nausea and loss of appetite. The results as to the immediate improvement of hearing and tinnitus are all slight. Grave changes may occur in the scar tissue or connective tissue in acting as a protective rather than as pathological, and grave lesions may occur. He mentions this drug because he knows that a good many men are using it indiscriminately, especially general practitioners, and three cases came to his notice with disastrous results. These three cases were reported in detail.

Ferrotropin.—Whenever he is called upon to prescribe an iron product in arsenic cases, associated with some ear, nose and throat affections, he usually does so by giving this pleasant iron preparation, which is easy to take and shows very early results, causing none of the disagreeable teeth symptoms. It does cause constipation, at times, owing to the chocolate it is mixed with.

Dr. E. Fletcher Ingals has used anesthesin in powder form, and while occasionally it has acted as a good anesthetic to open wounds, sometimes it has seemed absolutely worthless. Perhaps used in the form of an oily preparation it would be more satisfactory. He has obtained fairly good results from brometone in doses of not more than five grains, in such cases as the essayist has described. As to pollantine, he has only seen one patient in whom it seemed to do any good, and yet the ultimate result in this case was anything but satisfactory.

Dr. Norval H. Pierce has used anesthesin in a well-marked case of painful acute pharyngitis without any result. He has found that it produces some benefit in cases of itching of the external auditory canal. As to iodo-nucleoids, he thinks they produce as good results as the other iodides. He is quite convinced of that after some expérience with them. He has been disappointed in the use of pollantine, in that he has not seen a case that has been cured, and inasmuch as the remedy is actually worth its weight in gold, he believes it is almost prohibitive in the large majority of cases of hay fever.

Dr. O. J. Stein has used the Dunbar preparations for hay fever. He mentioned 26 cases which he recently reported before the Chicago Medical Society. When used very early in the morning, before the patient leaves the house, or at the onset of the first sign or symptom of hay fever, every one of his cases, excepting three, had a positive amelioration of the symptoms that were coming on.

Sensory Nerve Endings at the Entrance to the Larynx, with special reference to the structure and function of the taste buds.—Dr. J. Gordon Wilson said that laryngologists are apt to regard the function of the larynx as essentially for voice production, and to overlook the fact that it has another function of great importance in the animal economy, a function compared with whose antiquity the voice is but a thing of yesterday, namely, the protection of the respiratory passage from irritants and during swallowing. The closure of the larynx is the one never-failing office of that organ; the arytenoid cartilages and their muscles are the only ever-present structures. "The original function of the vocal cords was to protect the air passages—speech being a superadded function." (Bland-Sutton.) In birds the function of the larynx is to guard the trachea; the vocal function is entirely removed from the larynx. In order to effect this closure, the vestibule of the larynx is extremely sensitive; from an anatomical point of view this fact was recognized by the number and variety of its sensory nerve endings. This is the more impressed on one when a comparison is made between a relative number and distribution of the endings on the lingual with those on the laryngeal surface of the epiglottis, the laryngeal far surpassing in variety and number the lingual. In additiion, there is lodged in the vestibule of the larynx a sense of which few are aware—the sense of taste; a special sense whose presence is strongly upheld by some and equally strongly denied by others. All are agreed that over the upper part of the laryngeal mucous membrane taste buds are distributed, comparable to those of the tongue; but they still remain mysterious organs, about which little has been written, and about whose function we are still in the region of conjecture. The nerve trunks which carry fibers to the vestibule of the larynx are well known; but with regard to their central origins and their peripheral terminations much has yet to be done. The main nerve supply is the superior laryngeal. By this means there are conveyed fibers from three distinct sources, from the vagus, from the glosso-pharyngeus, and from the sympathetic. While the nerve branches are chiefly distributed on the side to which they belong, numerous fibers can be traced across the middle line, and after section of the superior laryngeal on one side, nerve degeneration is seen on the other side of the middle line. The main branches break up into subepithelial plexuses, from which arise the nerve endings. The nerve endings may be divided into two groups, subepithelial and epithelial. The subepithelial group presents both encapsulated and unencapsulated varieties. The encapsulated are chiefly modified Meissner corpuscles, nerve coils, and some varieties difficult to classify. The unencapsulated are chiefly tree-like endings, but Ruffini endings, and coils can also be seen. Of all these varieties the most numerous are the tree endings. The epithelial nerve endings are present in three varieties: (1) In ciliated epithelium; (2) in stratified epithelium; (3) in connection with the taste buds. In all these forms the varieties of endings are nonmedullated and varicose. Drawings were shown of all these varieties of nerve endings. The taste buds lie in the stratified squamous epithelium. They are not concealed in furrows, as in the circumvallate papillæ of the tongue, but lie on an exposed surface. They are comparable in structure to those of the tongue. They are abundantly supplied by nerves; around the bud (perigemmal); within the bud (intragemmal), and at the base (subgemmal). The two principal hypotheses in regard to the function of these buds were discussed: (1) As to whether they were mere phylogenetic residues; this hypothesis resting on the decrease which is apparent from a comparative study of the taste buds in vertebrates, and on the restriction of area which occurs in man at various stages of development. (2) Whether they were reflex organs to intensify the closure of the larynx during the passage of food—a hypothesis which is based upon their abundant nerve supply, their localization, and their functional activity.

Bronchoscopy for the Removal of a Collar Button from the Lung.—Dr. E. Fletcher Ingals stated that on May 23, 1904, a Mr. C. D. E. was sent to him by Dr. F. W. Wilcox, of Minona, Ill. He was twenty-two years of age, had formerly weighed 142 pounds, but at the time he visited him only weighed 107½

pounds. Fourteen months previously he had accidentally drawn a collar button, presumably of vegetable ivory, into the air passages. He at once felt the sensation caused by it near the upper part of the sternum on a level with the second rib. Subsequently he had some soreness in the same place. Pneumonia developed on the left side within twenty-four hours and lasted for one month. All of the symptoms the patient had were described in detail. Fluoroscopic examination showed a dense shadow all over the left side, excepting a small area in the infraclavicular region, where the shadow was less marked. The patient was sent to the Presbyterian Hospital, a skiagraph made, but nothing could be seen, the lungs being so dense that even the ribs did not cast a shadow near the root of the lung. Three other negatives were taken with similar results. At five o'clock in the afternoon of May 23, assisted by several internes, the patient was given chloroform, and by upper bronchoscopy he attempted to remove the button. Although he had previously given the patient one-sixtieth of a grain of atropine, there was still abundant secretion in the trachea and a large amount of expectoration. Indeed, the patient coughed practically all of the time during the operation, which lasted from the time the chloroform started until he desisted, in all about two hours. During this time the patient spat large quantities of bloody pus, which was only kept out of the speaker's eyes by placing a pane of glass between his face and the bronchoscope. The pus rendered it very difficult to see, and compelled Dr. Ingals to swab out the passages almost continuously. After swabbing out the pus, he could only get two or three seconds before the patient would cough again. This seemed to result from the passage of the bronchoscope into an abscess. The patient took the chloroform so badly that they were not able to keep him profoundly under it, and Dr. Ingals frequently touched the bronchial tubes and the walls of the abscess cavity with a solution of cocaine, but the amount of pus was so great that it had little effect. In the examination of the left lung he was unable to see the numerous branches of the bronchi that are usually apparent, though he followed one of the branches far down until the bronchoscope was introduced its full length, 33 cm. below the incisor teeth. He searched carefully by inspection and palpation with a small hooklet, but was unable to locate the foreign body. There was considerable granulation tissue about the bifurcation of the trachea that for some time interfered seriously with the inspection, and one mass presented the appearance of a small polypus which nearly filled the bronchoscope. He had not yet been told of the peculiar choking spells, and therefore did not have in mind anything of a polypoid nature in that region. The mass that he saw he did not dare to remove, fearing that it might be connected with the bronchus in such a way that he would open through the tube and cause a pneumothorax. During the operation a part of the time he used for removing the pus a strip of one inch gauze, which was crowded down the bronchoscope with a large wire, the end of which had been flattened and forked, like that used in the ordinary uterine packer. This worked fairly well, but much of the time he used cotton swabs attached very securely to long brass carriers. At one time in swabbing out the pus the sliding ring for fastening the cotton in the carrier caught on the end of the bronchoscope and he had a little difficulty in disengaging it. As the swab was withdrawn he examined it and found the swab of cotton intact, but it seemed to him a little smaller than the other. He concluded that this was due simply to its having become saturated with the pus. Some time later he discovered at the end of the bronchoscope a white mass which looked like a large swab of cotton. He grasped this with the forceps and withdrew it, thinking that it must be a pledget of cotton that had been lost at the time the instrument caught. Not wishing to direct attention to the interne, who had been fastening the cotton on the carriers, he simply called attention to it by a look and threw it aside without examining it. This mass appeared fully twice as large as any of the pledgets of cotton after they had been saturated with pus, and considering the subsequent history he is now confident that it consisted of the collar button surrounded with necrosed lung tissue. During the operation the patient's pulse varied from 110 to 150, but all the time was fairly full and regular. Immediately afterward he appeared to be doing well. The next day there was no temperature and patient said he felt fine. Two days later, he was discharged and went to his home in the country. Two weeks later Dr. Ingals received a report that he was improving very rapidly, did not cough except a few times in the morning, had a ravenous appetite, and had gained 11 pounds. A month later another report stated that he was feeling fine and had gained 22 pounds. Two weeks later the patient came to see Dr. Ingals so changed in appearance that he did not know him. He coughed very little indeed, had no pain, no dyspnea on exertion, had a ravenous appetite, and weighed 130 pounds. An examination of the left chest showed only slight dulness from the second to the sixth rib, showing that the lung had cleared up greatly from the third rib to the sixth, flatness below the sixth rib, otherwise in front and laterally signs over the chest much as at the first examination, excepting that the apex of the heart was found about one and a quarter inches to the left of the mammary line. Posteriorly, the respiratory sounds were good over the left lung as low as the eighth rib, but feeble or absent below that level. The fluoroscope still showed a shadow over the left lung, but much less dense than formerly. In response to a letter, the patient called upon him a few days ago—February 20. He said that he had been working twelve hours a day since September, had no cough, no temperature, health fine and weighed 136 pounds. Examination of the chest showed very slight diminution of resonance over the left side as low as the sixth rib in front and laterally, and as low as the eighth posteriorly, with a vesicular murmur in the same region about two-thirds as intense as upon the right side. The lung was somewhat contracted and the heart drawn one and a half to two inches to the left of its normal position. No respiratory sounds could be heard below the eighth rib posteriorly, probably due to drawing upward of the lung and diaphragm. The normal superficial area of cardiac dulness had disappeared over the right half of the lower part of the sternum, on account of the increased activity of the right lung, and the dislocation of the heart to the left caused by retraction of the left lung. The patient felt perfectly well, and, considering the history, he feels justified in reporting the operation as a complete success, although he did not at the time examine critically the mass that seemed to have been causing the trouble.

BOOK REVIEWS.

The Urine and Feces in Diagnosis. By Otto Hensel, Ph.G., M.D., Bacteriologist, German Hospital, New York, and Richard Weil, A.M., M.D., Pathologist, German Hospital, New York, in collaboration with Smith Ely Jelliffe, M.D., Ph.D., Instructor in Pharmacy and Therapeutics, Columbia University; Visiting Neurologist, City Hospital, New York. Illustrated with 116 engravings and 10 colored plates. Lea Brothers and Company, Philadelphia and New York.

During the last decade a proper interpretation of the condition of the feces, and a more than ordinary routine in the examination of the urine have become necessities in diagnosis. In the urine the Bence-Jones albumose, melanin diacetic acid, indican, various bacteria, etc., have yielded valuable diagnostic suggestions. In addition, tests for the functional efficiency of the kidneys, cryoscopy, the estimation of the purin bases, etc., have become essential in the study of difficult metabolic or renal conditions. Most of these tests are simple enough, but, buried in a mass of literature, their easy application has not been recognized. So a new book on the urine finds its principal excuse for existence in these newer things, and our authors have dealt with them in a practical clinical manner that will appeal to the practitioner. We are sorry to see in this good book that the authors cling to the long-exploded idea that indicanuria belongs to hypochlorhydria, and never to hyperchlorhydria.

But it is to the second section, that on the feces, that we turn with most welcome. Until now textbooks in English have given very cursory treatment of the feces question, and the recent valuable work in this field has been closed to one not conversant with the German language. Yet there is a rapidly growing desire for more knowledge on the subject, and this would seem to be the "psychological moment" for a feces book in English. Taking as their guide the epoch-making work of Schmidt and Strasburger, and the bacteriological studies of Ford, the authors have succeeded in covering the field in a practical way, without too much condensation. The chapter headings, Macroscopic, Microscopic, Bacteriological and Chemical Examinations, Animal Parasites and Characteristic Pictures in Disease, give a very inadequate idea of the scope of the work; such subheadings as, the estimation of the duration of the passage, amount of feces, Conner's classification, Schmidt's test-meal, Nothnagel's bodies, and vegetable detritus, indicating more nearly its completeness. The whole subject is treated with considerable detail, but is kept within the range of the general practitioner. A fair criticism might be that Ford's method for the identification of bacteria has been given too much space. There are many illustrations, both urinary and fecal, mostly following recognized authorities.

Conservative Gynecology and Electro-Therapeutics. A Practical Treatise on the Diseases of Women and Their Treatment by Electricity. By G. Betton Massey, M.D., Attending Surgeon to the American Oncologic Hospital, Philadelphia. Fourth edition, revised, rewritten and greatly enlarged. F. A. Davis Company, Philadelphia.

The progress of electro-therapeutics has necessitated extensive rewriting to modernize this fourth edition. The author considers the remedial power of electricty to be due to an alteration in the molecular activity of the cells, which alteration can be changed at will. Electricity is of especial value in gynecology, in that the prevalent nutritional and functional affections of the uterus and adnexa readily yield to its influence. This agent furthermore offers a choice of treatment in a class of affections notoriously maltreated by methods involving sacrifice of organs. The writer states that it is impossible for the scientific mind to consider electricity, or anything else, a cure-all, and while the pages are largely devoted to a demonstration of the value of electricity in certain definite conditions, any simpler means of treatment that might prove effective are not to be neglected. The volume contains a complete, though brief, dissertation on Roentgen rays, by Dr. Herman Grad, of New York. The entire work is attractive, admirably illustrated and of decided practical value and scientific interest.

Gynecology, Medical and Surgical. Outline for Students and Practitioners. By Henry J. Garrigues, A.M., M.D., Gynecologist to St. Mark's Hospital, Consulting Obstetric Surgeon to the New York Maternity Hospital, Consulting Physician to the New York Mothers' Home and Maternity, Honorary Fellow of the American Gynecological Society, Honorary Fellow of the College of Physicians of the German Dispensary, Ex-President of the German Medical Society. With 343 Illustrations. Pp. 461. J. B. Lippincott Company, Philadelphia and London.

This book is designed for students and general practitioners who seek acquaintance with the essentials of modern gynecology. The first third of the book, called a General Division, includes a chapter on Puberty and Climacteric, describes methods of examination, etiology and treatment in general, and the significance of bloody and mucous discharges from the genitals. Reference is made to another work of the author's for a description of the anatomy and physiology of the pelvic organs. The Special Section comprises the remainder of the book, in which diseases of the genital organs, urethra and bladder are described. A special chapter is given diseases of the rectum and anus, and another to sterility. The etiology, pathology and treatment for the most part is based on the writer's personal ideas and experience, frequently to the exclusion of modern beliefs and methods. The surgical descriptions are brief, a few generally accepted operations are described in detail, a number given passing mention, and others of recognized merit receive no notice. The book is designed for beginners and as such has much to commend it, but it is lacking in the detail and scope demanded by a work of reference which is to be of value to the specialist.

A Hand-book of Nursing. Revised Edition, for Hospital and General Use. Published under the direction of the Connecticut Training-School for Nurses, connected with the General Hospital Society, New Haven, Connecticut. J. B. Lippincott Company, Philadelphia and London.

This volume is more than a revision of the edition published in 1878, it is a new book. The various subjects are presented clearly, intelligently and with pleasing brevity. The greater part of the book is devoted to medical and surgical nursing. A second part gives directions for Obstetrical Nursing, labeled "Monthly Nursing," and a third section includes Family Hygiene and Emergencies. The sanitary suggestions for colleges and schools for girls are excellent. The book is intended to supplement class-room instruction and is well adapted to subserve the purpose for which it was written.

THE MEDICAL EXAMINATION FOR LIFE INSURANCE, and its Associated Clinical Methods, with chapters on the insurance of substandard lives and accident insurance. By CHARLES LYMAN GREENE, M.D., Professor of the Theory and Practice of Medicine in the University of Minnesota, Ex-President of the National Association of Life Insurance Examining Surgeons, formerly Medical Director of Minnesota Mutual Life Insurance Company, etc. Second Edition, revised and enlarged, with 99 illustrations. P. Blakiston's Son & Co., Philadelphia.

THE medical examiner for a life insurance company has for his object, not, as with the practising physician, the subsequent treatment of the patient, but solely the prognosis as to life; consequently he thinks nothing of the treatment, and places little credence on the statements of the examinee, who is financially interested. In addition to the diagnosis, therefore, he considers as very important, heredity, occupation, previous illness, the tendency of humans to deceive for the sake of gain, and other usually minor or irrelevant matters. The patient does not come to him complaining of palpitation, or frequent urination or constipation or cough, and the examiner must of himself determine whether the patient is now and promises to be in normal health or below normal. So none of the ordinary books on diagnosis or medicine fill the requirements of the life insurance examiner, and a work such as this of Greene is a practical boon.

After a short talk on the history of life insurance, the author proceeds to outline the problems of the examiner, the methods of physical examination, the significance of the urine findings, and how to examine sputum, urine, etc. A special chapter on the relation of heart disease and tuberculosis to insurance is well worth perusal. The author's dictum that "a thorough knowledge of the normal chest is all-important to the medical examiner" might well be brought home to every practitioner, whether an insurance examiner or not. Indeed, we find much in this book that may be read with profit and pleasure by every physician. The illustrations, especially those accompanying the chapters on physical diagnosis, are very good and very helpful.

INTERNATIONAL CLINICS, a Quarterly of Illustrated Clinical Lectures and Especially Prepared Original Articles on Treatment, Medicine, Surgery, Neurology, etc., by Leading Members of the Medical Profession throughout the World. Edited by A. O. J. KELLY, A.M., M.B., of Philadelphia. Volume I. Fifteenth series, 1905. J. B. Lippincott Company, Philadelphia and London.

THOUGH 110 pages of the present volume of the International Clinics are devoted to a review of the progress of medicine during 1904, a department, by the way, which, considering the number of reviews of medicine in one form or another that are now published, seems scarcely in place in the International Clinics, there are a number of very practical and interesting clinical lessons. New York clinicians are especially well represented. Dr. Morris Manges has an excellent article on Aortic Stenosis and Adherent Pericardium; Dr. James J. Walsh, a clinic in which he insists that the eye and the hand are more important in the diagnosis of heart disease than is the ear; Dr. Robert H. Dawbarn has a clinic on the Starvation of Malignant Growths, by depriving them of blood supply, with a discussion of the limits of application of this method of treatment; Dr. Russell A. Hibbs has a clinic on the treatment of knee-joint disease; Dr. Ernest Gallant, a clinic on the Treatment of Glenard's Disease. To those who are not familiar with it under this designation, it may be as well to say that this is floating kidney. One of the most interesting articles in this number is that by Dr. Charles K. Mills, of Philadelphia, on the legal consequences of drug addiction. There are besides the usual contributions from foreign sources.

INFANTILE MORTALITY AND INFANTS' MILK DEPOTS. By G. F. MCCLEARY, M.D., D.P.H., Medical Officer of Health of the Metropolitan Borough of Battersea. London. P. S. King & Son, London, Eng.

SUCH a book as this may be of value in Britain, but concerned solely with the methods of regulating the distribution of milk to the poor of large cities, it can have no general demand in this country. Indeed, much of its material is taken from American books or records; and in our meetings the subject has been reviewed again and again by our leading pediatrists, so that our milk supplies to-day are better than in any other part of the world. There are twenty-six illustrations, mostly of depots in different European cities, but they add nothing to the text, except perhaps one or two of the Battersea station in England. We would recommend the author to visit our own Walker-Gordon, Fairfield or Briarcliff dairies.

ABDOMINAL PAIN, Its Causes and Clinical Significance. By A. ERNEST MAYLARD, M.B., B.S. (Lond.), Surgeon to the Victoria Infirmary, Glasgow; Late Examiner in Surgery to the University of Glasgow, and Victoria University, Manchester; formerly Demonstrator of Anatomy, Guy's Hospital, London, and Ex-President of the Glasgow Pathological and Clinical Society; Author of a Treatise on the Surgery of the Alimentary Canal. P. Blakiston's Son & Co., Philadelphia.

FOR a long time the Germans have given tireless study to the symptom pain, which becomes manifest in almost all pathological conditions, and Dr. Maylard, realizing the fatal ignorance oftentimes displayed on the part of the general practitioner relative to abdominal pain has attempted to present as clear an analysis of this subject as present observations permit.

As he truthfully observes: "The old idea of a 'stomach-ache,' with the continual administration of an aperient to clear out the canal, or a sedative to soothe the patient's suffering, has given place to the more watchful and investigative attitude of seeking to ascertain the causes of the 'ache.'"

Pain *per se*, its nervous origin and correlation, splanchnic and somatic, is first taken up, following which the symptom as it relates to the various abdominal viscera is described from a standpoint both of character and etiology. A tabulated analysis of the regional manifestation of pain and its multitudinous probable causes has been made, which is not only a convenient résumé, but will prove helpful in arriving at an earlier diagnosis of obscure abdominal processes.

Why the author, after presenting an entirely useful treatise on the subject given, should wander off into an abbreviated "touch and go" kind of dissertation upon abdominal surgery is not exactly clear. The information which he intends it to convey can be found to much better advantage elsewhere, and its incorporation here detracts from the strength of the book.

A TEXT-BOOK OF THE PRACTICE OF MEDICINE FOR STUDENTS AND PRACTITIONERS. By HOBART AMORY HARE, M.D., B.Sc., Professor of Therapeutics in the Jefferson Medical College, of Philadelphia, etc. Lea Brothers & Company, New York and Philadelphia.

THERE have been many Practices of Medicine written in America, and many more will follow. Each in its turn, from Thacher's to the present time, has enjoyed a popularity commensurate with its usefulness.

The vast majority of the more ambitious works have reflected the experiences of clinicians—at least so far as works in the United States are concerned—and have mirrored the prevailing opinions of the times with greater or less accuracy and wealth of bibliographic research. A few only have been conceived with regard to the philosophy of disease, seen in its wider aspects—at the present time we know of but one such of native production.

Hare's work belongs to the more conventional and usable type. It is eminently descriptive and practical, particularly the latter, and offers much in contrast with the modern unfortunate tendency in more philosophical works, in the way of the treatment of disease.

Hare believes, and we follow him, that for the vast majority of students of medicine, and practitioners as well, the promulgation of therapeutic principles is not enough to guide one in the vast labyrinth of sickness; what is wanted as well are specific details—and these he provides with richness of illustration and from the wealth of a vast experience. The philosophies suffer, but this book is not meant for the specialist.

Further, the present volume offers to the reader a remarkable wealth of statistical material, bearing on incidence, mortality, morbidity, prognosis, etc., which is of great service in obtaining a general oversight of the disease in question. The statistical material is not utilized to its full value by a thoughtful presentation, but it can be found nowhere else in as rich profusion, and the individual reader should be able to utilize it according to his own needs.

Another excellent feature of the work is its highly descriptive and clinical character. It is almost monographic in most of the more important chapters in the inclusion of clinical types, and although some omissions are evident, they may truly be said to be unimportant.

From one point of view the reviewer cannot but help feel that the work could be improved, and that concerns the purely theoretical position of the grouping of the subjects. Thus, if the author attributes value to the group of "diseases due to animal parasites," why is malaria not included? or if his first group of "infectious diseases" is meant to denote a classification in a true sense, why are not the animal parasitic diseases, trypanosomiasis, and others, not infectious?

We freely admit, however, that the matter of grouping is of little value, particularly from the standpoint of the student, and does not in any sense affect the quality of the material presented.

Although the book is over 1,000 pages, and undoubtedly the author feels that is too compressed at the present time to do him full justice, we have been looking for the "Medical Practice" that would adequately outline the diseases of the mind. Why they should be neglected is, we believe, unfortunate, particularly when mental diseases are so common and so important.

It might seem, and it is probably true, that a Practice of Medicine that can faithfully reflect the modern aspect of the labor of the workers in medicine the world over cannot be written in 1,000 pages by any one man—the task is enormous—yet we can consistently say that Dr. Hare has undoubtedly accomplished a great work in this new Practice. The present generation demands a full grown and mature volume, and Hare's "Practice" will stand the test of true merit most conspicuously.

BOOKS RECEIVED.

DIET AND NUTRITION. By Dr. M. Einhorn. 12mo, 64 pages. Wm. Wood & Co., New York.

CHIRURGIE DU SYSTEME NERVEUX. By Dr. G. Marion. 8vo, 531 pages. Illustrated. G. Steinheil, Paris.

THE EYE, MIND, ENERGY AND MATTER. By Dr. C. Prentice. 12mo, 131 pages. Published by the author.

THE INTESTINAL CATARRHS. By Dr. E. Blake. 8vo, 356 pages. Illustrated. W. T. Keener & Co., Chicago.

ABDOMINAL PAIN. By Dr. A. E. Mayland. 8vo, 304 pages. Illustrated. P. Blakiston's Son & Co., Philadelphia.

JOHNS HOPKINS HOSPITAL REPORTS. Volume XII. 8vo, 548 pages. Illustrated. Johns Hopkins Press, Baltimore.

DISEASES OF THE HEART. By Dr. E. H. Colbeck. Second edition. 8vo, 350 pages. Illustrated. W. T. Keener & Co., Chicago.

ATONIA GASTRICA. By Drs. A. Rose and R. C. Kemp. 12mo, 203 pages. Illustrated. Funk & Wagnalls, New York and London.

DISEASES OF THE NERVOUS SYSTEM. By Dr. L. Harrison Mettler. 8vo, 989 pages. Illustrated. The Cleveland Press, Chicago.

INFANTILE MORTALITY AND INFANTS' MILK DEPOTS. By Dr. G. F. MacCleary. 12mo, 132 pages. Illustrated. P. S. King & Co., London.

ANNUAL REPORT OF THE COMMISSIONER OF EDUCATION FOR THE YEAR 1903. 8vo. Volumes I and II. Illustrated Government Printing Office, Washington.

APPENDICITIS, ITS DIAGNOSIS AND TREATMENT. By Dr. J. B. Deaver. Third edition. 8vo, 492 pages. Illustrated. P. Blakiston's Son & Co., Philadelphia.

ESSENTIALS OF THE PRACTICE OF MEDICINE. By Dr. W. R. Williams. 12mo, 460 pages. W. B. Saunders & Company, New York, Philadelphia and London.

OPERATIVE SURGERY. Volume II. By Dr. J. D. Bryant. Fourth edition. 8vo, 1,559 pages. Illustrated. D. Appleton & Company, New York and London.

DISEASES OF THE EYE AND EAR. By. Drs. A. N. Alling and O. A. Griffin, 12mo, 252 pages. Illustrated. Lea Brothers & Company, Philadelphia and New York.

VERMIFORM APPENDIX AND ITS DISEASES. By Drs. H. A. Kelly and E. Hurdon. 8vo, 827 pages. Illustrated. W. B. Saunders & Company, New York, Philadelphia and London.

DETECTION OF POISONS AND STRONG DRINK. By Dr. W. Autenrieth. Translated by Dr. W. H. Warren. 8vo, 22 pages. Illustrated. P. Blakiston's Son & Co., Philadelphia.

HISTORICAL RELATIONS OF MEDICINE AND SURGERY TO THE END OF THE SIXTEENTH CENTURY. By Dr. T. C. Allbutt. 12mo, 125 pages. The Macmillan Co., New York and London.

AMERICAN YEAR-BOOK OF MEDICINE AND SURGERY. 1905. 8vo, 696 pages. Illustrated. MEDICINE. 702 pages. Illustrated. W. B. Saunders & Company, New York, Philadelphia and London.

PROGRESSIVE MEDICINE. Volume I, March, 1905. Edited by Dr. H. A. Hare. 8vo, 298 pages. Lea Brothers & Co., New York and Philadelphia.

BACTERIOLOGY IN SURGICAL TECHNIC FOR NURSES. By Dr. E. M. A. Stoney. Second edition revised by F. R. Griffith. 8vo, 278 pages. Illustrated. W. B. Saunders & Company, New York, Philadelphia and London.